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ABSTRACTS ON THE PROBLEMS AND SCIENCE OF HUMAN SETTLEMENTS

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Cover illustration: The new building housing the Athens Technological Institute on the slopes of Mount Lycabettus, adjacent to the offices of Doxiadis Associates.

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E K I S T I C S

ABSTRACTS

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THE PROBLEMS AND SCIENCE OF HUMAN SETTLEMENTS

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TABLE OF CONTENTS

EDITORIAL 79

ABSTRACTS ON HOUSING, PLANNING AND CONSTRUCTION

Training in Ekistics (with illustrations pp. 83, 85)	The Athens Technological Institute	81
Report on the joint ECLA/TAA economic development training programme.	United Nations, ECLA	95
Data processing for city planning (with illustrations pp. 101, 103)	Roger L. Creighton, J. Douglas Carroll Jr., and Graham S. Finney.	98
Land use analysis by punched cards (with illustrations p. 105)	Arthur Morris	104
Housing surveys	Gt. Britain Dept of Scientific and Industrial Research.	108
General report of proceedings third urban design conference. (with illustrations pp. 116-117, 119, 121, 124, 127)	GSD, Harvard University	112
A village for immigrants in Nazareth (with illustrations pp. 130-131)	Fabrizio Cocchia	130
Chee-Dex system of construction (with illustrations p. 133)	Cheecol Processes Ltd	132
Expandable houses (with illustrations pp. 134-136)	Indonesia, Regional Housing Centre.	134
Modular coordination and building costs.	Cyril Sweet	137
Some social and cultural aspects of economic development (with charts pp. 146-147)	Manning Nash	139

International film contest on planning and housing SIAP Newsletter 149

APPENDIX

List of recent publications of interest 150

EDITORIAL

Technology -- the modern international frontier -- keynotes this issue of EKISTICS. The advancement of the technology concerned with the science of EKISTICS has come about in three ways: by education in new techniques; by their refinement and development and by the perfection and development of new machines.

EDUCATION

The school of EKISTICS in Athens provides a focal point for the study and development of EKISTICS internationally. Architects, geographers, engineers, economists, and social scientists, from many countries are brought together there to gain theoretical and practical knowledge, preparing them to make the many decisions affected by EKISTICS proficiently. The two year course balances theoretical with practical problems, and is designed to be flexible to meet the needs of the individual varied specialists from different countries. In the coming year a group of students from Pakistan will concentrate first on the theoretical side, and then undertake intensive supervised practical work in the office of Doxiadis Associates.

The alumni of the Graduate School of Design at Harvard University have sponsored an Urban Design Conference for the last three years. These conferences continue to consider the interplay of theoretical ideals with practical schemes and problems which had been part of their graduate program in the school. The Third Urban Design conference concentrated on an analysis of six housing schemes mainly from the point of view of the consequences of their physical design: four were from the United States, one from Canada, and one from Sweden. Architects, planners, and developers associated with the projects attended this seminar, as well as an invited group of architects, landscape architects, financiers, planners, lawyers, and other people concerned with residential development. The schemes were discussed in terms of such things as the relationship of high and low buildings, and use of open space. The discussion and analysis of these 6 schemes brought out many points which have a bearing on housing schemes anywhere in the world.

Tackling other aspects than design, The Economic Commission for Latin American and the U.N. Technical Assistance Administration have jointly created a training programme in economic development. This course is heavily weighted toward economics and statistical studies, in contrast to the EKISTICS program which combines this with associated studies in geography, history, sociology, architecture, and art, giving a broader basis for decision-making on development problems. Yet, the detail with which the Latin American programme goes into statistical analysis is indicative of the new frontiers in data processing.

It is an aim of EKISTICS to keep people who are interested in man's environment, up to date on the technical and theoretic realms of knowledge which are expanding man's ability to mold his own habitat. This issue has been largely devoted to this field.

NEW MACHINES AND PRODUCTS

With the aavancement of theoretical knowleage and educational programs, the technology of handling the masses of data needed in analyzing problems is becoming more precisely defined for ease in handling. The process of analyzing data by punched cards, as described in the English Journal of the Town Planning Institute, could be applied anywhere in the world. The cards could be completely produced and processed by hand, allowing large groups of statistics to be accurately and efficiently processed. The article on data processing in the Journal of the American Institute of Planners describes the application by the "science fiction" type machines of a complete handling and mapping of data. While the use of such machines is still very expensive today (practical only for extremely large scale problems) ultimately these techniques will be applied broadly.

The technology of modular building, has been set forth in a series of articles in preceding issues of EKISTICS. This month Cyril Sweet, a British expert on estimating costs, qualified the use of modular construction in these terms, adding more knowledge to this technical advance.

Cheap and new materials are being devised all the time for construction throughout the world; and the Cheaaex system described is another example which seems to have wide practical value.

NEW TECHNIQUES FOR ANALYSIS

With new machines to do analysis, the refinement of surveys, both qualitative and quantitative, is another growing field. Various kinds of housing surveys, and their analysis are described for the assessment of housing needs, conditions, and markets. An interesting proposal is made by Manning Nash for assessing the social and cultural aspects of a nation or region in regard to its potentidal for economic development. He is exploring the metnod of aevising a key analysis upon which the success of proposals for change or ability to change of a country can be evaluated.

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NOTE: The figures below each title refer to the Universal Decimal Classification.

The Athens Technological Institute
TRAINING IN EKISTICS.
The Institute, Athens, Greece.

1. The Athens Technological Institute was created in 1958 by a group of people who believed that the most practical and expedient way to further a country's development is through training, research and the free exchange of knowledge.

2. Its purposes are set forth in the Foundation Charter:

- To establish technical courses and to organise, equip, staff and supervise their operation.

- To organise lectures and seminars on technical and economic subjects.

- To publish books and periodicals relating to technical training.

- To further technical training in general.

It is housed in a new building adjacent to the offices of Doxiadis Associates on the slopes of Mount Lycabettus facing the Acropolis.

3. The administrative board consists of 4 university professors, the foreign minister, the presidents of the Chamber of Commerce and the Manufacturers' Association and five other prominent citizens, including Dr. C.A. Doxiadis, who is president of the institute, and E.P. Papanoutsos, its managing director. There are a number of scholarships donated from the Greek Chamber of Commerce, Doxiadis Associates and private American benefactors.

4. The basic course is a two year program in Ekistics open to graduates connected with the planning of all types of human settlements: architects, engineers, social scientists. 40 students registered for the first program which opened in January 1959. In the second academic year the program will be given entirely in English and already many foreign students have expressed their desire to attend it.

5. Other courses conducted by the Athens Technological Institute include:

Junior Engineers. A course for junior engineers whose purpose is to train the missing link between the master planner and the technician - the junior engineer who can interpret to the latter the ideas of the former, and know enough of the technician's job to see that these ideas are properly carried out. The course is open to students of junior high school level. It comprises both morning and night classes. The course lasts 3 years in morning classes, and 4 years in night classes. The morning course is shorter because it runs 5 hours daily, instead of 3 hours in the night courses.

The Athens Technological Institute. Training in Ekistics --2

The target of this course is to train sub-professional engineers and not to compete with professional courses. The majority of the 75 students who enrolled for this course in 1959 attended night classes only, an indication that the course appeals mostly to working youngsters.

Draughtsmen. Like the Junior Engineers' course, the draughtsmen's course aims at training assistants capable of carrying out the simpler part of an architect's work, thus enabling him to concentrate on the more creative part of a project. This course is also given in both morning and night programs. The morning program runs 5 hours daily and lasts 2 years. The night program runs 3 hours and lasts 3 years. This course is very popular among youngsters because of the demand and good salaries paid to able draughtsmen. It attracted 125 students in its first year.

Re-Training of Industrial Technicians. ATI has launched a program for re-training industrial technicians in 6 month intensive courses. These courses do not propose to substitute in-service training, but enrich the workers' background on their actual work. Their purpose is to give workers a more general training that will increase understanding of their role in the production process, enhance their initiative and responsibility, and raise their productivity. The IZOLA Co. (makers of refrigerators, ranges and other appliances) was the first industry to participate in the program with 40 technicians.

Secretarial Course. The purpose of this course is not merely to teach shorthand, typing and the latest systems of classification, but also to familiarise students with the use and maintenance of up-to-date office machines such as dictaphones, calculating machines, tape recorders and so forth. It primarily aims at developing in them a real professional conscience and turning them into self-confident, efficient secretaries capable of running an executive office.

6. Economic Development Program: In July 1958 an ATI research team started work on a project to prepare and submit to the Greek government a long-term program of economic development for Greece. Since war's end, many such development programs, prepared mostly by government services, have seen the light of day in this country. None was applied with consistency, mainly because until 1953, conditions in Greece were not suitable for the application of a stable policy. But a set of new conditions, evolved since 1953, have created in this country a climate suitable for the cohesive and consistent implementation of sound planning. Full use is being made of the experience acquired by the President of ATI, Dr. Constantinos Doxiadis, between 1946 and 1950 when he was non-political under-secretary for economic reconstruction and coordinator in Greece, and his continued interest in this direction. The program is expected to be completed by the end of 1960. This project is financed by several services, including Doxiadis Associates. The Ford Foundation has given a grant of $25,000 for the completion of this project.

Athens Technological Institute.

A view towards the town of Athens and the Acropolis. In the foreground a part of Doxiadis Associates building.

The Athens Technological Institute. Training in Ekistics --3

7. Every effort will be made to furnish foreign students of Ekistics with tape-recorded or mimeographed notes of the main lectures they will attend, as well as with texts, diagrams, photographs, etc. which for them will be useful material not only during their period of training, but also later in the course of their professional duties. The Athens Technological Institute's library is fully supplied with large number of books in English dealing with Ekistics subjects and its reading-room will be open during such hours as will facilitate its use by the Pakistani students for their personal work. Each student will return to his country with the nucleus of his personal library, and book catalogues for supplementing and enriching it.

8. The two year program in Ekistics remains the central core of the work of ATI. This post-graduate training does not aim at turning out theoreticians, adding even more academic knowledge to that already received by the students during their university years, but to enable these men to undertake immediate action in all scientific fields which, directly or indirectly, contribute to the development of the country. Therefore, it is considered necessary that the students' theoretical training should be supplemented by practice on subjects related to their particular profession. Practical work will afford them the opportunity of correlating the ideas acquired during their theoretical training with the problems encountered on the work site, and help them to transform their knowledge into an effective tool for the achievement of certain purposes. The training of a specialist in Ekistics, who, whether an architect, civil engineer, economist, sociologist, geographer, administrator or sanitary expert, is now called upon to play an important role in the development of the country, must combine wide knowledge, permitting an overall consideration of a many-sided subject with specialized practice which gives the ability to solve particular problems, accurately, methodically and properly. The organisation of Doxiadis Associates, especially formed to deal with large ekistics problems over the whole range of their complex appearance and the depth of their specific details, is particularly suited for the acquisition of practical experience by those studying the science of Ekistics.

9. In the academic year 1959/60 a special intensive course will be instituted especially for a large group from Pakistan who will complete the theoretical part of the two year course in two consecutive semesters, following this up by a year of supervised practical experience in Pakistan before receiving their degree. As this condensation of the time spent in Greece may be of interest to other nationalities, the program for this condensed course is appended:

Athens Technological Institute.

LIBRARY: ATI runs a well-equipped, well-organised lending library placing at the disposal of students the latest technical works and reference books.

Lecture Hall

The Athens Technological Institute. Training in Ekistics --4

10. The subjects include:

First Semester (October 1, 1959 to March 31, 1960)

Economics	2 hours per week
Statistics	2 " " "
Theory and History of Civilization	2 " " "
Community facilities and public works	2 " " "
Ekistics aspects of architecture	2 " " "
Theory and practice of Ekistics	3 " " "
Total	13 hours per week

Second Semester (April 1, 1960 to Sept. 30, 1960)

Geography	1 hour per week
Sociology and Housing Management	2 hours per week
Law	1 hour per week
Community facilities and works	2 hours per week
Ekistics aspects of architecture	2 " " "
Theory and practice of Ekistics.	5 " " "
Total	13 hours per week

11. The curriculum provides for 11 hours of seminars and study in the library, in addition of the 13 hours of lectures. During the first semester, these hours will be spent by the students in the preparation, presentation and discussion, together with their instructors, the various seminar-type assignments. During the second semester the same hours will be spent on the preparation, with the assistance of the faculty, of a treatise for their degree.

12. Seminar assignments in the first semester will be given to the students individually or in groups, depending on the extent of the subject and the special knowledge of the students. These assignments will consist of aspects or parts of a wider subject, and will aim at creating general interest and promoting co-operation of different on a subject of common interest.

13. At the end of the first four-month period the students will be called upon to suggest the subject of their treatise. According to its subject each treatise will be placed under the supervision of a professor who will be competent to discuss its contents with the student. Following this procedure, the subjects proposed by the students will be submitted for approval by the Board of Professors, so that such approval will be granted within two months from submission of the subjects and the students will be able to start working on them at the beginning of the second semester. During the seminars of the second semester, the students will be able to discuss their treatise with the competent professor who will help them in their work with criticism, suggestions, supply of data, bibliography, etc.

The Athens Technological Institute. Training in Ekistics --5

14. In the case of the condensed program for the Pakistani group of students, their year in Athens will consist of 4 hours work in the Athens Technological Institute, from 8.00 - 12.00 noon, and 4 hours practical work in the offices of Doxiadis Associates in the afternoon.

15. According to their particular profession, these students will be posted to the various branches of the Doxiadis Associates firm and will be assigned particular subjects for study under the guidance of the competent heads of branches. Practical work will initially be limited to the more simple and elementary subjects, and will gradually develop towards the more general and complex problems.

16. An architect for instance will start off by studying various house types so as to see in a new light this fundamental subject which he had become used to studying as a designer, and deal with it from every point: physical, social, economic, technical, and intellectual, as required by a proper ekistic approach. From the study of house types the architect will proceed to the study of public buildings and, later on, to a complete sector of a settlement.

17. The civil engineer, on the other hand, will begin with the study of materials and the method of construction of a house, with a view to adapting it more correctly to the local conditions as dictated by his newly acquired ekistic viewpoint, and then go on to studying all the facilities and public works included in a sector of a town.

18. The economic analysis and planning in relation to the development of settlements, and the location theory and urban economics are the main topics absorbing the activities of an economist within the framework of Ekistics. In the relevant branch of Doxiadis Associates he will be able to study such subject as the analysis of resources and the financing of a project, the pinpointing and extent of the various functions of a settlement as required by economic considerations etc.

19. The geographer will occupy himself with the collection of data pertaining to the physical and climatic conditions of a certain region, and with their systematic presentation in tables and graphs so that they can become a useful tool in the hands of his colleague the town-planner or architect, who will then evolve the correct solutions for that particular region.

20. The organization of labour, the study of the administrative structure of an organization suitable for handling an ekistic effort in all its aspects, the management of a project and the relevant legislation, are all suitable subjects for practice by the ekistic administrator.

21. Heads of branches of Doxiadis Associates keep records of the students' progress in their practical training and will forward such records to the Athens Technological Institute which will use them as additional data in the final grading of each student.

22. A brief description of the coverage of each course follows:

THROUGHOUT PROGRAM

23. Community facilities. The course on community facilities is concerned with the solutions of the problems of all public works necessary for the creation, construction and operation of settlements.

24. This course is divided into three major parts: the public works of settlements, the operation of settlement facilities and building works. The last, however, because of their speciality are incorporated in a separate course (Ekistics Aspects of Architecture) and thus the course of public works for settlements is confined only to the first two parts.

25. The community facilities comprise all works for the infrastructure of the settlements with the exception of the buildings, therefore all works that are located in the public area of the settlement, namely, roads, water supply, sewers and drainage, electricity, gas, telephones, heating (when heating is supplied as a public facility), etc.

26. The courses on public works for settlements are integrated by the legal courses with reference to administrative matters and by the course on economics, and form the necessary foundation for a proper understanding of the ekistic problems and their solution.

27. The part of the course dealing with the operation of settlements discusses all the functions that are not public works though they are frequently complemented by such works. Typical examples are traffic control of vehicles and pedestrians, garbage and waste removal, and the distribution of various commodities, etc.

28. This part is the necessary supplement to the part dealing with the design and construction of the public works for settlements as they have to be taken into consideration for the sound design of a settlement.

29. Ekistics Aspects of Architecture. These courses cover all questions pertaining to the construction, operation and appearance of all buildings (houses and other structures) and of the free spaces devoted to some special function either as a complement to the buildings themselves (yards, gardens, etc.) or as independent spaces used for special purposes (parks, public gardens, gymnasia, cemeteries, etc.).

The Athens Technological Institute. Training in Ekistics --7

30. The building works courses fall into the following sections: houses and other buildings, free spaces, general questions on architectural works and a general review of the part they play as material and moral factors in the creation of human environment.

31. The housing courses cover house layout (types of solutions, single houses and blocks of flats, one-storey and multi-storey buildings), the building of houses (traditions and future trends) and the problems of synthesis of houses for the creation of the public space of the settlement.

32. The courses on buildings involve the body of knowledge which is essential to make clear the part played by buildings in a settlement, their location and function. The pertinent courses are therefore divided into lessons in location, in layout, in construction and in proper synthesis with the surrounding space of settlements.

33. The course on open spaces is the counterpart of the preceding one on buildings. It comprises an analysis of the role and significance of open spaces, their size, their formation and function.

34. In this way, all the courses referred to above form a foundation for the understanding of the following and principal part which is the general questions regarding architectural works.

35. This part deals with the general questions of the role of architectural works (which make up more than 50% of the total construction industry and mainly represent private investment). Such are questions referring to the structure of settlements, their operation within a limited area and their appearance (shape, colour, additional features, green spaces, etc.).

36. These courses, along with those on facilities, will eventually provide the elements of which the various settlements will consist.

FIRST SEMESTER (on first year - a non-condensed course)

37. Economics. The courses in economics are intended to probe into the economic problems which are associated with Ekistics and the ways and means of dealing with them.

38. These subjects fall into three groups: economic planning, the economics of settlements and location theory.

The Athens Technological Institute. Training in Ekistics --8

39. The courses in economic planning trace the progress towards national economic plans, and explain the meaning and content of national economic plans, and the relationship to housing programs. These courses reveal the extent to which the overall ekistic activity, both in size and content, is a function of the overall resources and the investment effort of each particular country.

40. The purpose of the courses in the economics of settlements will be to show the way in which the principles of economic planning should be applied in the case of settlements, town area, municipality or communities if we wish their development to be successful, the plans to be realistic and be translated into practice.

41. These courses should include methods of assessing the income and investment effort of a settlement, methods used in the allocation of national resources among municipalities, methods for the collection of municipal dues and suggestions for the preparation of economic housing programs.

42. The courses in location theory explain the manner in which industry, transport and other economic activities (trade, warehousing, etc.) choose the site of their installations within the national and urban space and the methods of selecting such sites in future plans.

43. Statistics. The courses in statistics have as an object to outline the basic principles and methods whereby it is possible to analyse and describe quantitatively and subsequently study various " populations" and " samples" thereof. The term " population" is taken to mean the total results obtained from the infinite repetition of every clearly defined function or action. The term " sample" means a part sufficiently representative of the whole " population."

44. Where problems of Ekistics are studied, the data are usually " population" , or rather " samples" , which represent the physical, demographic, social, economic, traffic and other phenomena or functions which arise out of the co-existence of human " populations" . The usefulness of statistics in the study of ekistic problems is therefore self-evident.

45. The courses in statistics are purely courses in the teaching of methods for an analysis and understanding of ekistic phenomena and for the definition of the road to be followed for their solution. They fall into two parts: general statistical theory and applications of statistics to Ekistics.

The Athens Technological Institute. Training in Ekistics --9

46. The general statistical theory, with special emphasis on the phenomena of " populations" , is indispensable for the analysis of practically every ekistic phenomenon, even though it may look very simple. To illustrate this, it is sufficient to state that not only population, traffic and economic phenomena within a metropolis need investigation, but even the plan of a simple house should be influenced by a statistical analysis of the number of movements affected by certain individuals within a certain period of time.

47. The application of statistics to Ekistics may be divided into two large categories: those which concern the phenomena which are unrelated to the dimensions of space, and the category of phenomena which are a function thereof. The first category covers demographic, economic, social and technical phenomena which must be analysed by reference to their magnitude, so that they may become intelligible and be dealt with in the proper manner. On the basis of such an analysis it will be possible to determine the policy and the programs to be observed by any particular country, area or settlement.

48. The second category, however, involves a special statistical investigation of all these phenomena in relation to space. The number of vehicles and the number of kilometers per vehicle per day show the extent of traffic inside a settlement, but it can be of no use in planning a communication network unless supplemented by a transport map showing the density of traffic as an unbroken section thereof, and by an analysis of potential traffic volume in every street section, whether in an existing or a new quarter. On this point, the application of statistics is linked to location theory and is indispensable to every future ekistic plan.

49. Theory and History of Civilizations. The aim of this course is to show that the life of man and his settlement are influenced not only by geographical, economic and social phenomena but also by ideas, art and in general by the culture which man himself has created.

50. These courses are divided into: General History of Civilization, Outline of Basic Civilizations, Relation between Civilization and Art, and Relation between Civilization and Human Settlement.

51. The general history of civilization is a brief philosophical review of the development of civilization. It presents the concept of civilization as a synthesis of the achievements of man at a certain place and period of his history.

52. The outline of basic civilizations presents a summary and simplified picture of the great civilizations in the history of mankind, it draws a distinction between past civilizations and those still alive and gives an account of the geographical distribution of modern civilizations, the phase through which each one is passing, and the influence it exercises in each area, in order to enable the student to fit each modern country into the framework of the civilization to which it belongs and to ascertain which civilizations have left traces on it.

53. The courses which deal with the relationship between civilization and art have as an object to point to the interdependence between each civilization and the arts which it has brought into being. They are intended to demonstrate mainly the visual setting which man has produced around him in every age - a setting which is not influenced only by rational factors.

54. Lastly, the courses in the relationship between civilization and settlements attempt to show the way in which, apart from geography and economics, civilization or the lack thereof has played a considerable role in the formation of settlements in a certain area and a certain period. Thus this chapter is associated with Ekistic geography, in fact it is a projection and partial interpretation of the latter. It is also associated with Ekistic analysis and Ekistic history, of which it is also one interpretation.

SECOND HALF

55. Geography. This course intends to give an account of the physical geographic setting and data which constitute the foundation and background of the various settlements.

56. The contents fall into the following categories: physical geography, topography, economic geography and ekistic geography.

57. Physical geography provides all the data which affect the distribution of settlements on land and in space, the climate, ground formation, transport services and the resources of the soil and subsoil.

58. Topography is a projection of physical geography within a smaller area. It investigates not so much the distribution of settlements, which depends on more important geographical phenomena, as their layout. This is in turn dependent on microclimatic conditions, ground contours, the quality of the soil, the flora, the fauna and the prospects of developing the resources of the soil and subsoil, the formation of harbours, canals, the production of the soil, etc.

The Athens Technological Institute. Training in Ekistics --11

59. Human geography, called ethnography and folklore, will inquire into the individual and collective life of man (morals, customs, institutions) as a function of the geographical area and the physical factors which determine it. Within the framework of the curriculum, it will be related to the other geographical subjects and to the social subjects.

60. Economic geography is the complement to physical geography. It provides data on man-made elements by which people did or may influence Ekistic development, by creating lakes, cutting tunnels, building harbours, etc. It is linked within the framework of the curriculum not only to the other chapters on geography but also to location theory which should be able to explain what economic geography teaches.

61. Ekistic geography deals with the distribution of settlements in space and their pattern in relation to physical and economic geography. It is closely interrelated with location theory and marks a starting point for the understanding of Ekistics of which it forms the foundation.

62. Sociology and Housing Management. Sociology presents the social problems which are associated with Ekistics and the ways and means of dealing with them. These subjects fall into three groups: demography, general social phenomena and community structure.

63. Demography explains the population phenomena which are related to Ekistics problems, such as population movement - whether normal or artificial - its distribution in space, migration, distribution by age and sex, etc. They are thus closely related to economic and Ekistic geography and to location theory.

64. The general social phenomena, which include health, education, welfare, and social security, and which should be studied both from the standpoint of the existing situation and from that of the policy to be pursued, are the chief pointers to the main problems responsible for bad Ekistic conditions and serve as guidance in fitting Ekistic policy into the general social policy followed by any one particular country. They are associated with and influence Ekistic phenomena and national economic plans of which the social programs are a necessary complement.

65. Community structure is the fundamental phenomenon which must be studied in order to grasp the pattern and economy of settlements, as also their future structure relevant to the distribution of the population in an area, a city or even a village. It provides fundamental guidance for the decisions which affect the essence of regional and town planning.

66. The integration of the above concepts into a comprehensive, applicable pattern is Ekistic management. Following the analysis of the sociological phenomena, Ekistic management synthesizes the conclusions into a pattern of action that is used from the conception of a settlement through its creation and beyond that into the formation and structure of the human community that will live in it.

67. Law. These legal courses are concerned with the solutions which are given or may be given to housing problems from the legal and administrative points of view.

68. The legal courses fall into three basic parts: general legal subjects on the role played by the state and by administration in matters of housing development; legal questions pertaining to property and the use of land; and questions of rules and regulations affecting the creation and execution of housing projects.

69. The general legal subjects referring to the part played by the state and by administration in matters of ekistic development involve a general review of the development of the basic conceptions of law in relation to development plans, of the legislation affecting state development plans in general, of the legislation affecting the relation between the state on the one hand and municipalities and communities on the other; or between the state and housing development organizations (water supply, sewerage, special fund organization, etc.); of the legislation concerning popular housing and labour housing; and every other legislation relevant to the development of settlements or parts thereof.

70. These courses are the necessary complement to the economic courses centred around national economic plans and housing schemes.

71. The legal and administrative courses relevant to land use problems cover all questions of land ownership, land transfer, land acquisition for housing projects and all matters pertaining to the use of land (the preparation of town plans, industrial zones, national parks, special areas and the operation of every type of such areas.)

72. Lastly, the courses on the rules and regulations affecting the engineering and execution of housing projects range over all questions of town planning and housing regulations, general and special rules on housing settlements or sections thereof (parks, transport services, etc.) and the manner in which the state machinery operates for the application and observance of these rules.

United Nations, Economic Commission for Latin America
REPORT ON THE JOINT ECLA/TAA ECONOMIC DEVELOPMENT TRAINING PROGRAMME.
Eighth Session, Panama City, Panama, May, 1959.
378.9 (100)

1. In 1952 the Economic Commission for Latin America (ECLA) and the Technical Assistance Administration (TAA) jointly initiated a study program in economic development planning. It is the product of the accumulated experience of the secretariat staff and serves as one important channel through which this experience is transmitted to the Latin American countries.

2. It combines the efforts of persons of the most highly varied specialities to provide a common conceptual background in regard to ideas and techniques of economic development programming. The mixed groups of economists, civil engineers, agronomists and other professionals who have taken the training courses during the past seven years are making a real contribution to the development of Latin America through their work in government, the academic world and even international organizations.

3. The results of this programme have been satisfactory. It has provided students of different professional backgrounds with an essential minimum of common knowledge and a good grasp of the general subject of development. It has improved programming techniques by trying to incorporate the advances made by the leading world academic centres and to adapt them to Latin American conditions.

4. The operations of the training programme are made up in two parts; the Santiago programme (an eight-month course held yearly at the Secretariat Headquarters); Three-month intensive courses (held in the capitals of member countries at their request and by special arrangement with TAA.)

5. The Santiago Programme is the backbone of the entire effort. It has graduated 93 people from every country in Latin America except the Dominican Republic, one from Yugoslavia, one from Iran and one from Egypt. Indirectly its results have also produced the preparation of a series of texts covering the material taught in the courses, furthered original research in planning theory and technique, and created a pool of competent professors within the region for teaching economic development.

6. There are five basic courses in the Santiago Programme which also form the nucleus of the intensive three-month courses which are held outside Santiago. These courses are made up of 20-30 lectures, seminars, and laboratory problems. The five courses are:

- Social Accounting,
- Programming Techniques and Development Policy,
- Preparation and Evaluation of Investment Projects,

- Financing of Economic Development, and
- Organization for Planning Development.

7. Social accounting includes the theory and practice of national income accounting, the preparation of a coherent series of social accounts, the uses of tables showing inter-industrial transactions (input-output), and sources and uses of monetary funds. Practical work includes the following subjects:

a. Compilation of the sources of statistical information from the participant country;

b. Preparation of a coherent series of social accounts;

c. Preparation of historical series of current and adjusted prices;

d. Determination of the main elasticities;

e. Preparation of a four-sector input-output table for the participant's country.

8. The course on programming techniques and development policy constitutes the backbone of the whole programme. Its objective is to work out a method for facilitating the realistic and consistent formulation of a coordinated economic policy. The main aspects of the theory of economic growth and their applicability to under-developed countries are dealt with. Comparative analyses are made of the various countries with particular reference to such basic development problems as the stagnation of the external and agricultural sectors.

9. Preparation and evaluation of investment projects. The suitable preparation and presentation of investment projects and their consistent evaluation from the commercial and social points of view is handled in lectures and seminars at which a series of specific cases and personal assignments are discussed. The latter include exercises in arranging material for various suggested projects and the application to them of different evaluation criteria.

10. Financing of economic development. This course comprises lectures which deal with the general problem of financing, the instruments which may be used in the under-developed countries to finance self-liquidating projects, the role played by taxation in financing, and the characteristics of the main financial organizations (development corporations, investment banks, etc.). During the seminars, discussion is centered on practical experience derived from a series of specific cases.

11. In the course on organization for planning development the administrative problems involved in the application of a co-ordinated development policy are studied. Consideration is given to the powers of central planning boards or offices, their relationships with political authorities, and, in addition, the administrative procedures necessary for the formulation, execution, and supervision of a plan.

12. In addition to these five, nine other courses are offered in the Santiago Programme. These include special lectures (with guest speakers), advanced programming methods, problems of industrial siting and regional development, population and labour problems, agricultural programming, industrial programming, energy programming, transport programming, and monetary and fiscal policy for the under-developed countries.

13. The course in problems of industrial siting and regional development deals with suitable methods of effecting siting studies by enterprises and by sectors. Lectures also discuss the methods of studying the different characteristics of regions and sub-regions from the development point of view and the ways in which economic forces may be concentrated in a given region and in which economic activities may be attracted to the backward zone of a given country.

14. A series of ten lectures on population and labour problems goes into the use of population censuses in projects, and their break-down by principal categories of economic activity for the purpose of estimating the availability of various types of manpower. Special attention is given to:

a. The problem of migration towards urban centres, as well as urban and rural unemployment; and

b. The problem of skilled labour, demand for it and the social costs of the professional training required to meet this demand.

15. In the agricultural programming course the special technological characteristics of the farm sector as well as its basic role of satisfying the over-whelming demand of the mass of the population in under-developed countries is emphasized.

Creighton, Roger L., Carroll, Jr., J. Douglas, and Finney, Graham S.
DATA PROCESSING FOR CITY PLANNING
Journal of the American Institute of Planners, May 1959, Vol. XXV, pp. 96-103, Illustrations.
711.11 (73)

1. This article was prepared for a special issue of the Journal of the American Institute of Planners dealing with land use and traffic models. The practioner-researcher authors have actually carried out studies using the most advanced techniques of data processing which they have reported on. Roger L. Creighton, Assistant Director (Research and Planning) for the Chicago Area Transportation Study and J. Douglas Carroll, Jr., Director of the Chicago Area Transportation Study (formerly Study Director of the Detroit Metropolitan Area Traffic Study) have prepared the CATS Land Use Survey, and CATS Travel Inventory. Graham S. Finney, Planning Director in Portland, Maine, is responsible for undertaking the detailed analysis of Portland's Central Business District.

2. Data processing consists of converting information into a form which can be handled by machinery, processing the information in a variety of ways, and finally putting it into useful form. Two requirements must be fulfilled to justify mechanical data processing. First, there must be enough information so that the use of high-speed machinery is profitable. Second, the information must be reducible to numeric form. Attention is thus focused where there are large numbers of occurrences or events (generally more than a thousand) and where the occurrences can be measured. The data processing machine is exact and swift, but completely unintelligent. Exactness and completeness in specifications of input and output are therefore absolutely essential. One must know, in advance, what the outcome is likely to be or else the effort will have been largely wasted.

3. There are two broad categories of machines. The first category includes the electrical accounting machine, more often known as the punched-card machine. Punched-card machines accomplish five principal types of functions: initial operations, processing, summarizing, calculating, and output. The initial operations of punched-card machines include the keypunching and verifying of data from source documents. Also included are such processes as duplicating cards, gang-punching data from one set of cards to another set, reproducing cards, converting mark-sensed pencil marks into punches, and interpreting punches in cards into printed information at the top of each card. The processing of cards is actually arranging them for counting by sorting, selecting, merging, or matching them. The output of card machines takes the form eventually of a printed tabular report, although there can be intermediate outputs in the form of cards. The printed report is prepared by the same machine which summarizes, and can be either in the form of columns of figures or in the form of maps with figures giving values at certain geographic locations.

4. The cost of data processing depends upon whether a job is done with rented machinery, which is maintained on the premises, or is contracted out to a service bureau. Job for job, the service bureau will probably charge two to three times the cost of running the same job on the premises; but in the former case there is no continuing cost of overhead, maintenance, or manpower. As a rough rule of thumb, the cost of operating a self-contained accounting unit (with a small calculator and a summary printer) will run from $1500 to $2000 per month, including salaries of operators. With normal overhead costs thrown in the minimum will run from $2000 to $3000 per month.

5. The second category is digital computers. These assume a wide variety of forms, but essentially operate with electrical or magnetic charges rather than with the timing and mechanical handling of cards. Computers can both process data and compute, but normally they are most efficient when used solely for computation. In computors the " memory" is in the form of magnetic charges, and these are prohibitively expensive to maintain in contrast to the cards which form the memory in the accounting machine. Data are initially fed into the computer by punched cards or by punched paper tape. Therefore, all the preliminary work of coding, punching, verifying, and perfecting data must be undertaken before the data are fed into the computer. Once data are in the computer, calculations, and operations can be conducted with lightning rapidity. Both speeds and costs of work with electronic computers are extremely variable and no generalizations can be made.

6. The Chicago Area Transportation Study (CATS) needed land use data as a basis for determining the rates of trip generation of various land uses and to provide information necessary to predict future land use patterns and, hence, future trip generation. A detailed land use survey was undertaken for the 1236-square-mile study area. A floor-area survey was made for 300 square miles, including the cities of Chicago, Evanston, Oak Park, and Cicero. The land use survey measured fourteen categories of uses with approximately 50,000 blocks. Eighty-eight floor-area categories were measured in buildings totaling 2.2 billion square feet. The conduct of such a land use survey without mechanical data processing was impossible within any reasonable budget.

7. After the floor area survey was made (using electric utility meter cards, Sanborn maps, and aerial photographs), floor areas were computed for each building. These building floor areas (120,000 cards) were then summarized into block and quarter-square-mile floor-area summaries. In the land-use survey, the areas in each use in each block were recorded on a coding form which was then keypunched.

8. Both floor-area and land-area surveys were coded to a half-mile grid coordinate system. An intersection at the center of the city was at the point x-500, y-500. Groups of these quarter-square mile interval grid-coordinate units made up the 582

analysis zones in the Study area. These analysis zones were numbered so that they could be grouped by districts or by rings or sectors.

9. The quarter-square-mile cards were printed on maps, by arranging in order their x-coordinates within their y-coordinates. The cards were then fed into a printer which read and remembered all the values of the cards having a single y-coordinate, and then printed the values in exact x-coordinate position across a preprinted map fed into the machine. This process was then repeated for the next y-coordinate, until a whole map had been prepared (see figure 1).

10. The values printed on the gridded map--in effect a geographic table--were processed by one of two methods to make the results more readable. The values could be isolined (contoured) as if they represented elevations on a topographic map, (see Figure 2), or a model could be built with the height of wooden blocks representing the values in each quarter-square mile.

11. The Portland (Maine) Central Business District Study in preparation of comprehensive plans for Portland's downtown, and for subordinate shopping areas, gave rise to an investigation of simple mechanical data processing as a basis for the compiling of planning information and for the simple and graphic presentation of that data.

12. The inventory phase of the study involved four basic sets of information on four decks of cards.

(1) A structure card containing complete data as to the date, and type, and character of construction of each structure, its facilities, state of maintenance, and valuation, as well as data relating to the site on which the structure was located: access, loading, on site parking, frontages, and land valuation.

(2) An establishment card containing a three-digit functional land use classification and detailed information regarding vacancies, employees, floor area, storage off and on site parking for employees and customers, deliveries, and store hours.

(3) A business climate card containing the results of nearly 1,800 personal interviews to ascertain business attitudes toward parking policy, expansion trends, and suggestions for downtown improvement.

(4) A shopper's attitude card containing the results of 750 interviews made according to a random areal sampling of the Greater Portland community.

975	1	3	5	1	1			1	2	12	2	6	7	15	10	9	11	17							
970		4		3	4	4	9	1	1	20	6	7	5	7		11	14	10							
965		1	1	1	5	4	3	2	1	1		8	4	6	6	22	15	26							
960	1	3	5				9	9	27	4	7	14	8	11	10	17	18	17	1						
955		9	2			5	4	9	11	7	7	16	10	7	10	30	16	44	6						
950		3	1	5	2	5	3	17	30	13	11	9	12	10	14	24	4	15	5						
945	4	4	1	3	3	4	1	13	19	7	5	13	7	16	6	25	8	19	14						
940		1	2	1	3	6	4	6	20	10	7	36	14	21	7	38	19	24	9	6					
935	1		2	6	5	8	7	9	27	30	20	12	8	20	29	55	88	21	33	5					
930	3	7	8	14	2	3	2	9	11	67	6	10	13	19	36	27	4	24	1	0					
925			6	28	30	19	11	7	28	10	16	4	10	26	10	26	41	9	33	11					
920	2	2	13	9	4	29	6	31	93	23	30	16	9	23	41	27	40	44	14	12					
915	2	2	3	2	2	8	3	13	50	16	9	10		14	14	34	29	58	39	48					
910		2	1	1	3	4	3	13	93	13	6	33	14	11	16	19	19	29	34	70					
905	4	20	31	16	14	7	5	7	11	9	8	22	38	34	27	29	26	51	86	194					
900	3	7	9	7	7	11	13	24	43	42	27	31	33	37	33	43	63	83	155	813					
895	3	9	5	3	4	6	3	14	26	13	7	20	17	17	27	38	71	149	277	1089					

FIG. 1.—SECTION OF MAP PRINT-OUT. This illustration shows values printed by machine in cells which correspond to areas one half mile by one half mile. Figures to the left are Y-coordinate values.

FIG. 2.—COMMERCIAL LAND IN THE CHICAGO AREA. Isolines used to connect those quarter square miles having equal amounts of commercial land area.

Creighton, Roger L.... Data processing for city planning --4

13. The CATS Travel Inventory analyzed origin-destination surveys which yielded data that produced over 150,000 completed schedules. Only mechanical means could handle this, since each schedule might have from 100 to 300 codable pieces of information. When keypunched, these filled over 700,000 punched cards.

14. The key problem became one of digesting this vast mountain of data--making it understandable to the analyst and to the reader of a report. One of the techniques used has been described, summarizing land use data to a grid and then printing values directly on a map. Another technique employed a medium-speed electronic computer which the study maintained on its premises. All trip data had been read from punched cards into this machine and " sorted" on magnetic tape. Each reel of tape held the equivalent of 45,000 IBM cards. Short summaries of data could then be rapidly prepared in tabular form, such as a table of the distribution of trips by length for each mode of travel.

15. These methods were not, however, suited to the rapid presentation of desire lines. Originally, desire-line maps were prepared by hand; later, methods were developed for making them by card computer, but these methods were still slow and clumsy. A special machine was developed for the Study by the Armour Research Foundation: the Cartographatron.

16. The cartographatron is an electronic device for displaying desire lines on the face of a cathode ray tube. Magnetic tapes are prepared on a computer which carries the x,y map coordinate of the origin and destination and all other pertinent data about each sample trip. These trips are then changed to a set of electrical impulses (i.e., to analogue form). Control selectors check the type of trip to be displayed and for those trips desired for a particular map, a beam is generated on the face of a cathode ray tube from x,y origin to destination. This is, in effect, a desire line. A camera with its lens open is sealed in, facing the cathode ray tube. Every time a "blip" occurs on the face of the tube it is recorded on a glass plate negative. These trips are converted to desire lines and accumulated on a photographic emulsion. If one wants to know how many trips being at any point, a densitometer can read the amount of light passing through the negative and convert this to a numerical value, which is within 5-10 percent of the true " digital" information.

Journal of the American Institute of Planners, May 1959.

FIG. 5.—CARTOGRAPHATRON. Machine for preparing desire line maps used by the Chicago Area Transportation Study. Monitor "scope" shown under tape-reading unit. Precision tube in separate housing at left with camera mounted on top of tube face.

FIG. 6.—DESIRE LINE MAP OF ALL PERSON-TRIPS. This Cartographatron print shows the desire line traces of 247,700 person-trip records, representing about 9,930,000 person-trips made on an average weekday in 1956 in part of the Study Area of the Chicago Area Transportation Study. Brighter areas show a greater accumulation of desire lines. Step wedge shown at left.

Morris, Arthur,
LAND USE ANALYSIS BY PUNCHED CARDS
Journal of the Town Planning Institute, Vol. XIV, No. 7, June, 1959.
pp. 163-167, Illustration.
711.11 (100)

1. Arthur Morris has prepared a land use analysis by hand punched cards for Middlesex Country, England. While this article is descriptive, not prescriptive, it provides an example of an efficient and practical way of dealing with a mass of statistics without using complex and expensive data processing machinery.

2. The simplest form of punched cards was used in Middlesex County. The method employs the well-established system of cards perforated around the edge. These perforations can be broken according to a code representing what information has to be recorded. When cards recording any particular classification are required they are sorted out by the " needling" process, i.e. a needle is inserted through a particular sequence of holes in a stack of cards, then the desired cards are allowed to drop off. This system allows economy without the charges of high powered machinery.

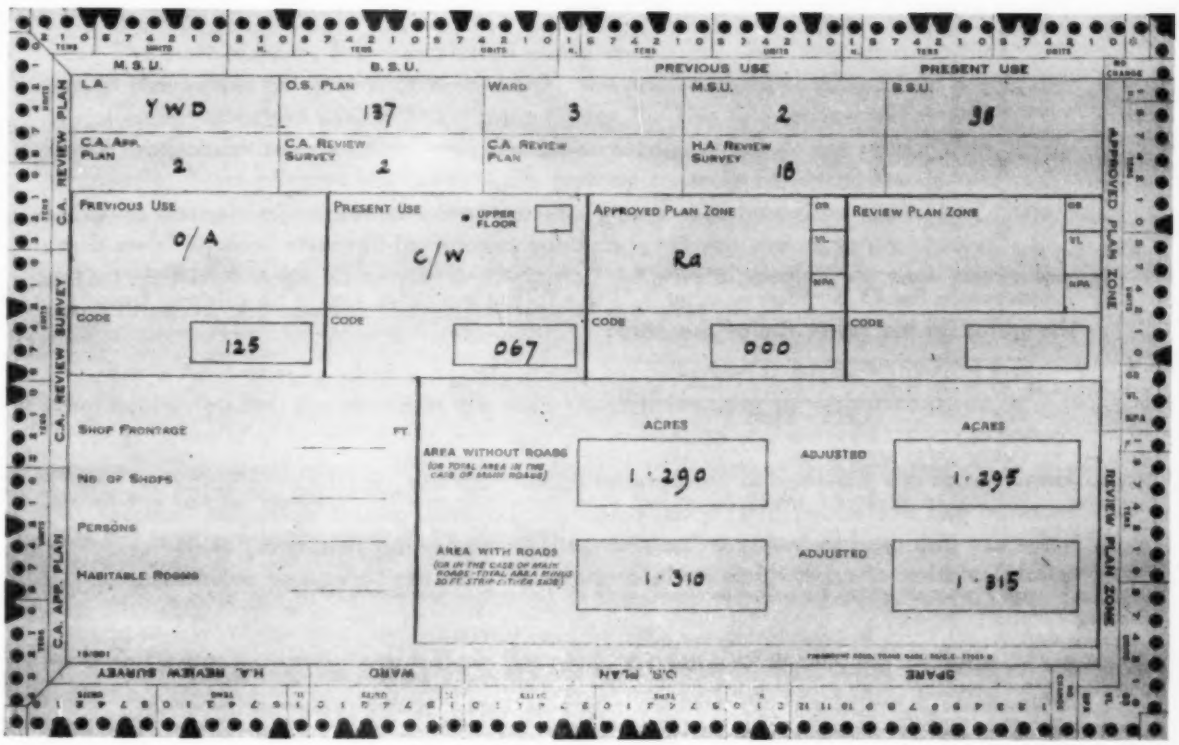
3. Initially in Middlesex, it is estimated that the donkey work of measuring and tabulating took about 15 percent more labour as compared with orthodox methods. Thereafter, the system cannot fail to be a substantial economy, for once having produced the set of cards, statistics can be prepared in any form in which they are ever likely to be needed. It is estimated that to cover the 148,691 acres of Middlesex about 50,000 cards will be needed.

4. Three broad types of information are recorded upon the face of the cards. These are Territoritorial Units, Categories of Use, and Quantities. Territorial units occupy the upper two lines, Categories of Use the next line, and Quantities appear at the bottom.

5. In the definition of Territorial Units, L.A. identified the District Council. No code numbers are used because the cards are always stored in a County District sequence. The County District is then broken down into four sub-units*: O.S. Plan, an arabic number is given to each 1/2500 Ordinance Plan; Ward, a serial number is given to the ward as at present; M.S.U. (major statistical unit); B.S.U. (basic statistical unit). In effect, the basic statistical unit is the individual piece of the jig-saw puzzle arrived at by superimposing on each 1/2500 sheet boundaries representing the Wards, M.S.U.'s, cartogram areas, density survey areas, and development plan zones. Each parcel was also identified for the following territorial characteristics: Cartogram Area Approved Plan; Cartogram Area Review Survey; Cartogram Area Review Plan; Homogeneous Area Review Survey.

*From this point on, information is also coded by clipping the appropriate holes around the edge of the card: see illustration.

Journal of the Town Planning Institute, June 1959.

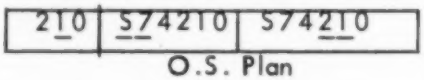


6. Both previous and present land use are also recorded on the face of the card. The top right corner of this panel is a box labelled " upper floor" with an asterisk. A cross is put in the case of buildings where the upper floor is essentially different from the ground, such as flats over shops. Two cards are made out for such cases, one for ground level and one for the upper uses.

7. To code a complicated land use system, the " S.7.4.2.1.0" system is used so as to make six holes do the work of ten digits. For the digit 0, only the hole labelled 0 is clipped but for 1 to 9, two holes must always be used, viz:

1 - S.1
2 - S.2
3 - 2.1
4 - S.2
5 - 4.1
6 - 4.2
7 - S.7
8 - 7.1
9 - 7.2

for example for O.S. Plan number 173 the following holes would be clipped from the series on the lower rim of the card.



O.S. Plan

Single holes are provided to indicate an upper floor use, facilitating quick location and exclusion, e.g. when calculating overall ground acreages. Single holes are also used to indicate "no change" from previous land uses, allowing quick isolation of cards referring to changes between the surveys or amendments to a Plan.

8. Upon the lower half of the face of the card are panels for acreages. This information is not coded around the rim. Two acreages are recorded for each parcel--viz, " Without roads" and "with roads." This enables acreages to be analysed in accordance with the usual definition of "net" area, and to ascertain the bare site area of any use excluding roads. In the bottom left-hand corner, spaces are available for recording shop frontage and number of shops, persons and habitable rooms, in the anticipation that in due course population and accommodation density surveys can be incorporated into the punched card method.

Morris, Arthur. Land use analysis by punched cards ---3

9. The procedure for this coding on cards is first to accurately map the area under the various categories of territorial units. A major key map must be made showing the boundaries of each basic statistical unit and its code reference. The second step is to prepare previous and present land use maps. On a map showing the basic statistical units, changes in land use, the areas without roads, and areas with roads are recorded. A third map shows the present land uses, together with the boundaries of the basic statistical units.

10. After these three maps have been made the face of a punched card is filled in for each different use or combination of change shown. Then the code numbers are added also on the face of the card. At this point, cards are checked for errors.

11. The code numbers are then slotted along the edges. For some entries which repeat themselves on several or many cards, the cards should be sorted into appropriate piles and punched with a "hand gang slotter." This is a device which will punch many cards in one operation. For other entries which do not repeat themselves frequently, hand clippers are used. Care must be taken in selecting the correct holes, as a single mistake means that the whole card must be written out again. The cards are "needle" checked for correct punching. In this the cards are worked systematically through all entries and selected out with a needle. As each particular batch drops off the needle, the written entries are checked.

12. For a final check, when a complete map (or ordnance sheet of 960 acres) has been accounted for, the acreages are added up. If it comes to within 15 acres, a factor is calculated by which the acreages are multiplied and entered up in the boxes labelled "Adjusted" acres. If the discrepancy is trifling then it is adjusted on to a few of the largest parcels. If the discrepancy is too great (over 15 acres of 960) then the previous workings must be checked.

13. Space does not allow the reproducing of the complete list of code numbers for the Use and Development Plan categories. However, in choosing the code number for a particular category, one follows the obvious rules that the most frequently occurring ones are given the simplest numbers (e.g., Residential is 000, Unused land 100) and that "families" of uses are numbered consecutively. Thus, for example, there are 36 different Civic, Cultural, and Special uses, and they are allotted numbers between 040 and 079. Similarly the Education uses are coded between 080 and 099. Hence if you wish to find out the acreaged devoted to, say, Cinemas, the appropriate code number is needled out, and the acreages then calculated from the cards. But if you require the grand total of all Civic etc. uses, it is only necessary to needle out the 40s, 50s, 60s, and 70s. The first three can be pulled out by simply needling No. 4 in the tens and the remaining 70s by needling 5 and 7 in the tens.

Great Britain, Department of Scientific and Industrial Research, Colonial Liaison Office.
HOUSING SURVEYS
Overseas Building Notes, No. 59, April, 1959, pp. 1-9. Illustrations.
333.322 : 711.11 (100)

1. The following notes were prepared for the Inter-African Conference on Housing and Urbanisation held at Nairobi in January, 1959. They consist of a discussion of the types of housingsurveys which may be made and the purpose which they mainly serve.

2. There are many ways of making housing surveys: some simple and some elaborate; some approximate and some more precise. Choice depends on the purpose for which the survey is required; how much time, money and personnel can be devoted to it; and what data already exists. Broadly speaking, housing surveys fall into one of three categories:

(a) General assessment of housing needs in a territory or town, usually carried out by central or local government, to provide data on which to base social policy and determine priorities; also to assess amount of land to be zoned for housing in town development plans. Largely based on existing data like a population census, it is subject to differences in interpretation and may consequently be a matter of controversy.

(b) Surveys of present conditions and future needsof specific communities which it is proposed to resettle because site is required for another use or has been condemned as a slum. The survey will give information on how many people want rehousing, the size of the household, and the kind of housing they can afford. If the cost of rehousing has to be underwritten as a social service, it also will indicate the likely cost.

(c) Surveys of the likely markets for houses built to sell or let. This kind of information may be needed by the commercial developer. It also helps a public housing authority to plan a balanced programme.

3. The housing shortage should be identified as either a market shortage or a shortage in relation to real needs. A market shortage is determined by the difference between the number of dwellings required to establish an equilibrium between supply and demand at existing levels of rents or prices and incomes, and the number of dwellings actually available. Demand can be met by further provision of new houses or by increasing prices or rents, taxes or running expenses, thus curtailing demand to match supply. An accurate computation of a housing shortage is a complex matter, because it may be a shortage only in relation to real needs. In some cases there may be an excess of certain types of dwellings and a shortage of others; or an overall

shortage in some localities and a surplus in others. A thorough analysis must take account of the size, quality and other characteristics of a dwelling in relation to the pattern of requirements. Diversity of rent and income levels further complicates the picture; since in many countries people live in dwellings which by any standard are unsatisfactory, yet at the same time there are appropriate dwellings vacant at rents beyond their means.

4. To assess housing needs existing housing registers of requests for housing may be used. They are, at best, no more than a broad indication of housing needs. Great practical difficulties arise in using them as a means of estimating shortage, for example:

a. There is a risk of double counting;

b. They are rarely up to date;

c. There is a tendency for people to register in anticipation of real need, especially where a serious housing shortage exists.

5. The only satisfactory approach towards an accurate assessment of a housing shortage is to use detailed statistics of population and of the dwelling stock. Computation of this kind can be applied to all the population or to some parts thereof where the main problem arises. The sources of statistical information may be either existing censuses of population and housing or a special survey.

6. The information required in the housing assessment may pertain to the housing stock or population statistics. The housing stock may be expressed as number of rooms, number of dwellings or floor space. The population statistics may include, total population, number of married couples, or number of households.

7. Comparative analysis in the following terms casts useful light on various facets of the housing shortage:

a. Number of dwellings per thousand inhabitants. (This has limited value because certain variables must be taken into account, e.g., average size of dwellings.)

b. Number of dwellings with the number of households;

c. Number of dwellings with the number of married couples;

d. Number of persons with number of rooms;

e. Floor space per person;

f. Numbers of overcrowded dwellings.

Great Britain . . . Housing surveys --3

8. A housing shortage can be estimated from statistical data by reference to current demographic needs, and current replacement needs. The current demographic needs may be defined according to the increase in the number of married couples (where housing shortage is primarily a lack of separate dwellings) or increase in total populations.

9. Thus the housing shortage may be calculated by means of a comparison between the number of persons and the number of rooms, or the number of households and the numbers of dwellings. Either method has its advantages and often a combination of both methods may be useful in order that the housing shortage can be estimated in both senses of the terms.

10. In assessing a housing shortage in terms of current replacement needs two factors should be accounted for:

a. The number of dwellings which should be demolished and replaced immediately, either because they are sub-standard and not worth reconditioning, or for other reasons mainly of a town planning character.

b. The number of dwellings which should be replaced annually during the period of the housing programme, owing to obsolescence; because they are falling out of use owing to a shift to population away from particular areas; because dwellings are being transferred to other uses such as offices or shops; and for town planning reasons.

11. An estimation on this basis will require a comprehensive survey of the quality and age of existing housing stock. Even when the information is collected the problem of evaluation is extremely difficult, particularly on technical assessment of houses which might be demolished at the end of ten years or more.

12. One method of determining approximate replacement rates is on the basis of statistical analysis of age distribution of existing housing stock. This requires an assessment of the average lifetime of a house, which is dependent mainly on quality of construction and materials used and further influenced by the extent to which adequate repairs and maintenance have been carried out.

13. Where statistics are not available on the age distribution of the existing housing stock, it is possible to arrive at an approximate appreciation of the situation from a study of demographic information relating to the period when houses were first constructed which are not, by virtue of age, considered ripe for

replacement. For this purpose it would be necessary to assume that buildings were being built during such a period at sufficient rate to match the increase in population. For example, assume an average life of the traditional dwelling type as 50 years and a projected housing programme covering the 10 years from 1955-65; then:

a. Establish the difference in the total size of the population in 1910 compared wiht 1900;

b. Calculate what this figure represents as a percentage of the population at the present time;

c. Apply the percentage so determined to the existing housing stock.

14. The result of this method may be regarded as an approximation of the number of dwellings built between 45-55 years ago. Divide the number of dwellings so calculated by 10 and an approximate annual replacement rate over the next ten years would be arrived at. This is obviously a very rough method and would require refinement when applied to any given situation.

Graduate School of Design, Harvard University
GENERAL REPORT OF PROCEEDINGS THIRD URBAN DESIGN CONFERENCE
Printed Report, April, 1959. 51 pages. Illustrations.
728 : 711.1 (100)

1. The urban design conference at Harvard University each year brings together, by invitation, architects, landscape architects, city planners, investors and developers, politicians, theoreticians and practioners to discuss problems of urban design.

2. The goal of the third conference in April, 1959 was to arrive at certain principles which can guide the design of large scale residential developments of an urban character - afterwards called "residential sectors"- both within the city complex and on the fringes of the metropolitan area.

3. Six recently proposed "residential sectors" were chosen as case studies for separate analysis by six separate panels who met prior to the main conference; five general assumptions were adopted and twelve questions posed intended to pinpoint discussions.

4. The assumptions upon which the analysis of the six projects were based arose from the previous conferences and were as follows:

Assumption 1: that those meeting in this conference consider that an urban way of living is desirable.

Assumption 2: that the residential sector that the panels will study are or should be part of a larger planned community.

Assumption 3: that the urban region is moving in the direction of differential sectors of development linked to a major highway network and set amid areas of undisturbed countryside. (Urban constellation pattern of growth as against the undifferentiated urban sprawl of today).

Assumption 4: that some means will be found to control the use of inter-urban land use.

Assumption 5: that mobility gives everyone freedom of access to different points of the urban region.

5. Robert Geddes, chairman of the general discussion and current President of the Harvard GSD Alumni Association remarked that the six selected residential projects divided themselves into pairs: Vallingby, Stockholm, and Don Mills, Toronto, are more or less new towns. Lake Meadows, Chicago, and Gratiot, Detroit, are two developments with rather similar kinds of programs and sites.

GSD, Harvard University. General report... third urban design conference --2

The Philadelphia Washington Square-Society Hill development and the St. Louis Mill Creek development have many more linkages to their surroundings and the same kinds of problems.

6. The plan for Vallingby was presented in general terms in the March, 1959, EKISTICS. Don Mills is a new town 8 miles from the center of Toronto. The development by the Canadian Equity and Development Corporation began in 1952 to be built within 10 years. The 2,200 acre site designed by Macklin Hancock (and others) will have an eventual population of 35,000 people who will live in single family houses, row houses and garden apartments. The program includes industrial plants, residential areas, and the complete commercial, civic, religious, and education needs for this size community.

7. The Lake Meadows development is located on a 105 acre site, 2 1/2 miles from the Chicago Loop. Skidmore, Owings and Merrill are the designers of this sector which has 2,005 apartments in five high rise blocks, with a density of 40 units per acre. The New York Life Insurance Company has taken on the development of the project. In comparison, the Gratiot development in Detroit, adjacent to downtown, is only half the size of Lake Meadows (55 acres) but includes 19 extra acres of public parkland. Chicago Redeveloper Herbert Greenwald (with associate Samuel Katzin) and the Citizens Redevelopment Corporation, are working in association with Mies van der Rohe as architect. This team accepted the concept of high and low housing intermixed, and the development is planned for 1450 high rise and 350 two-story blocks.

8. Interestingly, two alternative plans were presented for the Washington Square Redevelopment in Philadelphia. Both the plan by I.M. Pei and O. Stonorov had the same specifications. The first, the one to be chosen will be developed by Webb and Knapp for the Philadelphia City Planning Commission. The site has 27 acres which will have 720 units in high-rise and 300 garden apartments or town houses (row houses) allowing for a total population of about 2300. The larger Mill Creek Redevelopment site in St. Louis will have half its development in one-two story row houses and garden apartments and no more than one-fourth in high-rise. This plan is being designed by Mayer, Whittlesey and Glass with City and Suburban Homes (James H. Scheuer) acting as developer. An alternative plan was designed by I.M. Pei for Webb and Knapp.

9. As a result of analyzing the six projects, the panel reports and the discussion were divided into 7 major pertinent topics.

1. Relations between city and developers
2. Relations of high and low buildings
3. Relations of buildings and open space.

4. Relations of project with city
5. Relations of privacy and anonymity with a feeling of "belonging" and variety
6. Relations between dwelling and transportation
7. Relations of project with industry.

Ekistics will present some of the many and diverse points of views, opinions, and reactions to projects in regard to (2) Relations of high and low buildings, and (3) Relations of buildings and open space.

10. RELATIONS OF HIGH AND LOW BUILDINGS. Significant points arose on each of the projects except Don Mills.

11. The panel on Vallingby (John Howard, Daniel van Ginkel, Serge Chermayeff, Carl Koch, Harry Madway, Stephen Diamond, and R.G. Echols) reported that it achieves variety in character and price of dwellings admirably (though the number and siting of the tall buildings is subject to criticism). Vallingby does not achieve a flexibility in plan to permit future shifts in proportions of housing types which would be desirable.

12. The panel for Lake Meadows (Reginald Isaacs, Robert Little, Fred Kraft, A.C. Rogers, S.N. Shurchliff, Ralph Taylor, Harry Weese, Richard Barker and Connie Lieder) felt that the original scheme of two long apartments blocks, instead of the five, would have made a more definite statement of scale. In the original scheme the same number of apartments (1300) were provided in two parallel slabs, each 23 storeys high and 632 feet long, which would have provided greater contrast to surrounding areas. It was felt that there could have been an increase in density of structures without destroying the oasis aspect of the design. In fact, there was feeling that more buildings might create more definable spaces, and stronger relationships between the buildings. Variety of buildings would add more interest to the project. It was pointed out that more structure could always be added, and the present design admits to this possibility. As it stands, it was felt that it could not serve as a prototype of redevelopment because of the lack of balance of the community, and the question of the "urbanity" of apartments in a sea of grass.

13. The roofscape of the Gratiot Redevelopment was criticised by its panel members (Frederick Adams, John Garber, Charles Blessing, Jerzy Soltan, T.W. Mackesey, Jaqueline Tyrwhitt, W. von Moltke, Michael Graves, and L.Y. Chan). In designs comprising high and low buildings a large number of residents are generally obliged to overlook the roofs of the low buildings. It

was considered that the design of this roofscape demanded more careful treatment. In addition, the relationships between the buildings in the project are weak or completely lacking because of the distances between the buildings. There is a lack of scale in the project with no attempt to integrate the high structures with the low. The spaces are not defined by either the building massing or the landscape treatment.

14. The makeup of the panel of the Washington Square project, Philadelphia, provides an example of the interrelationship of specialists who analyzed each project. Its chairman was Preston Andrade (a practising architect on the faculty of the School of Architecture, University of Philadelphia); the rapporteur was Anthony Penfold, (Phd candidate in City Planning, Harvard University); the panel members, Edmund Bacon, (director of the Philadelphia City Planning Board), Garrett Eckbo (practicing landscape architect), Martin Meyerson (professor of city planning, Harvard University and Director of the Joint Center of Urban Studies), I. Ming Pei and Oscar Stonorov (designers of alternative plans), Jose Luis Sert (Dean of the Harvard Graduate School of Design), Jerome Rappaport (developer); W.L. Slayton (developer with Webb and Knapp); and Richard Mertens, student assistant. Because of the contrast of the two plans, both depending on relationship of high and low buildings, and both maintaining the elements and devices employed in the city's "program" plan, the criticism by this panel is given in some detail:

15. The Stonorov plan for Washington Square proposes to create a social focus in the Dock Street area by using maximum densities, by introducing other activity centers (theatre, concert hall, etc.) and recognizes this concept as a highly developed urban kind of space. The Pei plan supposes the growth of a core further west - perhaps at Washington Square - and treats Dock Street as a peripheral area which, in a sense, flows into the river front development. It attaches much less importance to the core concept than does the Stonorov plan. The physical results of these attitudes are two very different kinds of space.

a. In the Stonorov plan, buildings are used to delimit space, to create and define spaces by enclosure.

b. The Pei plan is essentially axial. Its Dock Street Towers are free-standing objects in spaces partially defined by lower elements. It is akin to the cathedral group at Pisa in this respect.

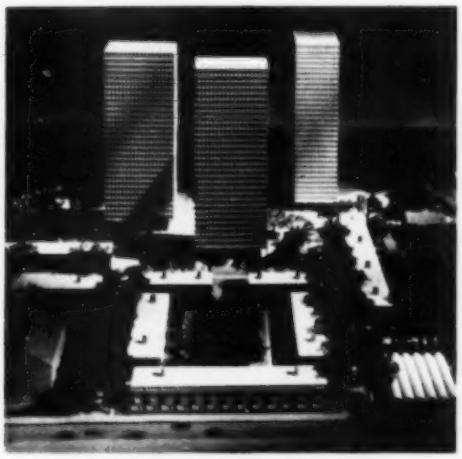
16. From their study, the panel came to five conclusions concerning the Washington Square Redevelopment.

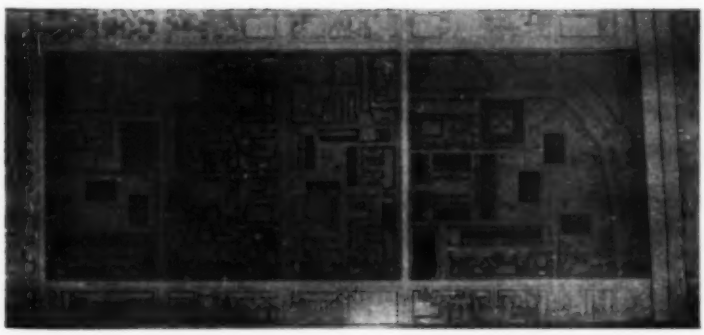
a. The Pei plan has successfully developed its concept. This concept is valid, though not exclusively.

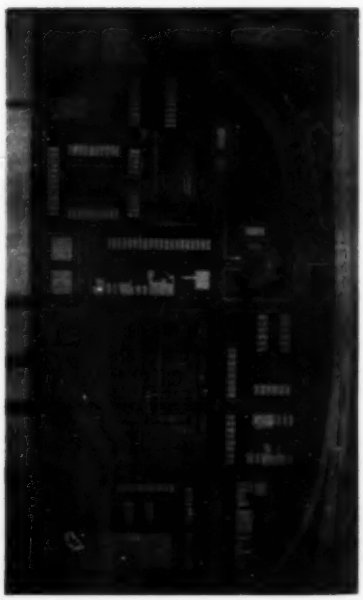
b. Low elements, such as buildings, trees, land forms, etc., can be used effectively to "create spaces" and they themselves profit from close relationship to spaces (streets, small squares, etc.) that they define. Tall structures

WASHINGTON SQUARE, PHILADELPHIA

Design by I.M. Pei

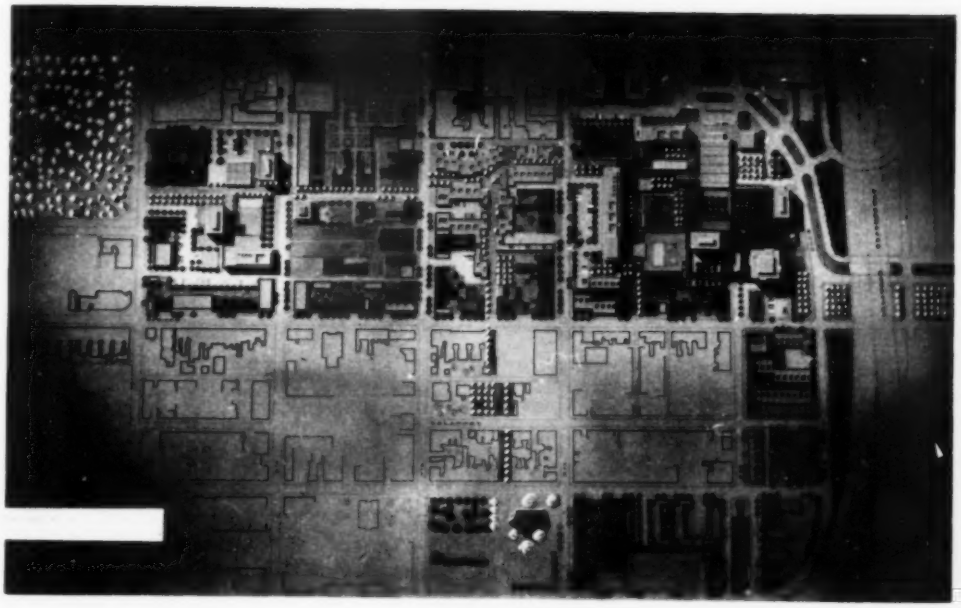






WASHINGTON SQUARE, PHILADELPHIA

Design by O. Stonorov



(particularly of the tower form) can be treated as free-standing objects.

c. The relationship between high and low structures is best treated by frank recognition of their difference of scale. This can become a positive force in creating a desirable variety of experience in space and form as well as a variety of facilities.

d. The co-mingling of old and new can be used to this same end and is a natural result of growth and organic change.

e. Buildings, old and new, are not a completely plastic element in the hands of the designer. People's needs and preferences and their ability and willingness to pay for what they want as expressed in "marketability" must be taken into account.

17. The panel studying the Mill Creek Redevelopment, St. Louis (David Wallace, William Conklin, Charles Ferris, Dean McClure, Hideo Sasaki, Kevin Lynch, Richard Miller, James Scheuer, Julian Whittlesey, Charles Parker, and G. Bugbee) contrasted the solutions proposed by I.M. Pei and by Mayer, Whittlesey and Glass.

18. The Pei solution for the Mill Creek Redevelopment resolves itself through an axial symmetry of residential housing groups along a central green area that reveals itself in plan to be an extension of the St. Louis University campus eastward towards downtown St. Louis. The design, based on a classical formality, has an ordered, inward-looking development with all automobile parking on the outside periphery. A very clear distinction and grouping by housing types was established as the project extended along its east-west axis, and the residential neighborhood was buffered from the industrial acreage by a strip of public and semi-public land.

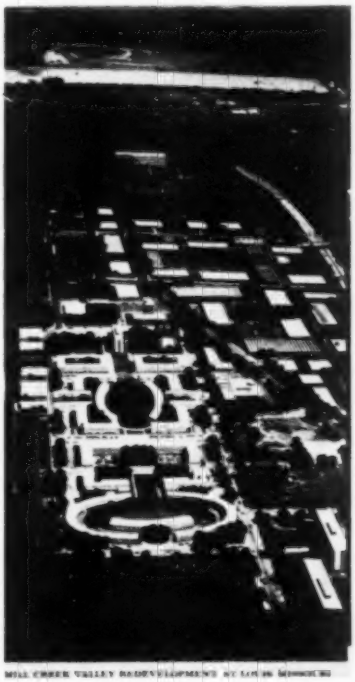
19. The Mayer, Whittlesey and Glass solution is noticeably contrasted to the Pei design by its informal character and mixture of building types within the residential area. This scheme also developed lineally along a central east-west park area that extended from the mall of the university campus eastward through the project area. To either side of this mall, housing groups are disposed in an informal fashion that strives to "avoid the institutional". The scheme rather than being focused inwards, opens outwards onto the east-west traffic artery for a length of three blocks and is separated from the industrial area only by a street.

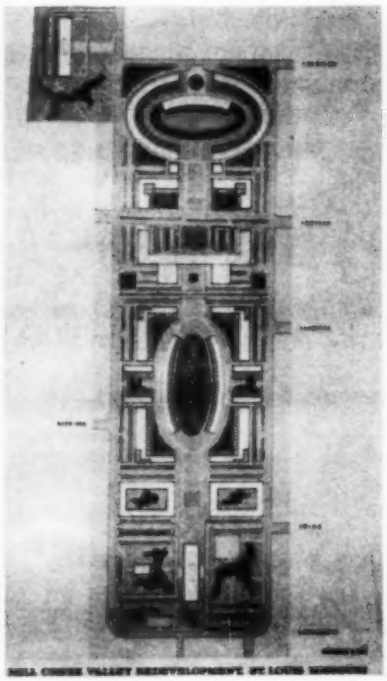
20. The general discussion brought forward many interesting points in regard to scale, the use of towers versus slabs, and the combination of high and low buildings.

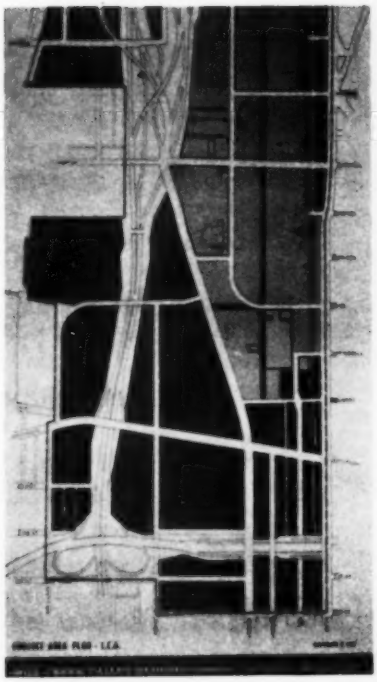
21. Serge Chermayeff (Professor of architecture, Harvard University): There is no doubt that the most distinguished scheme on the really urban scale is Washington Square, Philadelphia. However, I want to question one aspect of that scheme. I recognize of course, this transition from the low building group, which recognizes

MILL CREEK, ST. LOUIS

Design by I.M. Pei

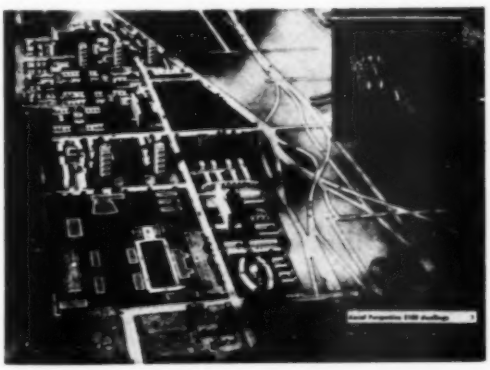


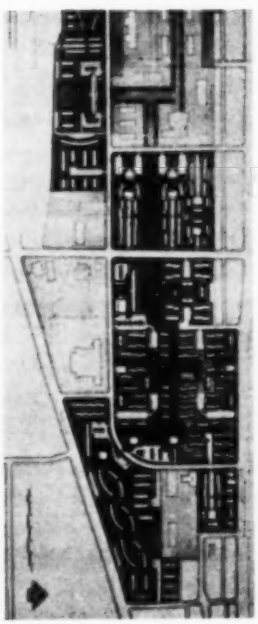




Design by:

Mayer, Whitttlesey & Glass



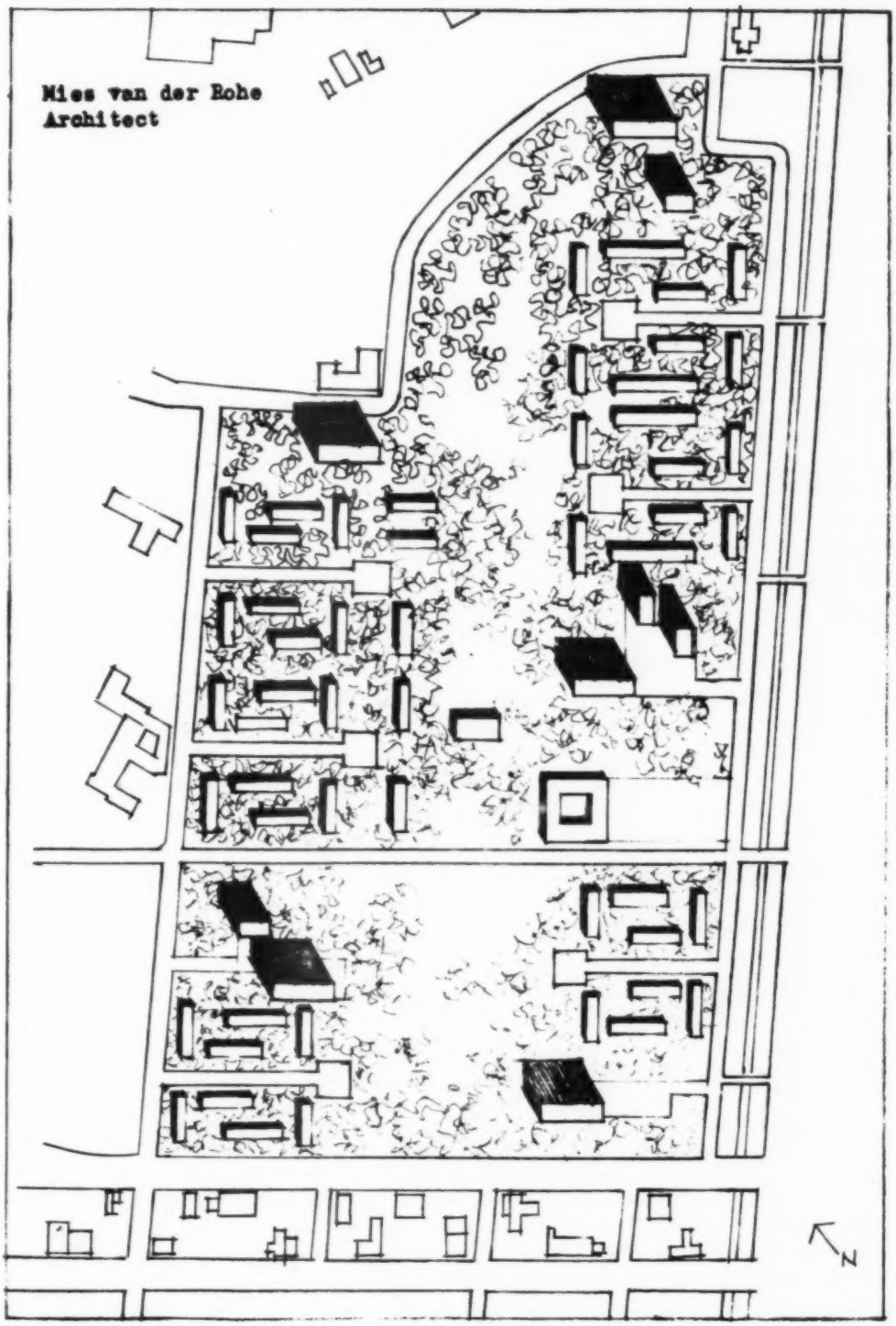


the street, the 18th century buildings, and so on, which stands as sort of a catalyst between the new and the old. This is one piece of city scale, or one spectrum of city scale. But you mention privacy. Here we have at the other end of the spectrum a magnificant composition in terms of vistas, great malls, movement, etc. These are at a totally different scale and are very sensitively calculated to operate in that manner. But I find myself at the bottom of a man-made cliff. At the foot of this is my pedestrian garden. And I really question whether the plan at that point does not crack, because it confuses two scales within the visual spectrum of genuine first-hand experience. Who shall live at the bottom of that cliff in the little garden in peace? And is this not a violation of the notion of appropriateness?

22. Ed Bacon (Director, Philadelphia City Planning Board). I think you certainly put the finger on a very difficult part of the problem of Washington Square. I believe that the basic problem which you present exists in design itself and that this solution has recognized it and dealt with it. To go into the specific question: The court between the tall buildings and 3rd Street is an internal looking court which looks away from the tall buildings. It has its own internal view relationship.

23. I Ming Pei. (Designer, Washington Square) In the beginning our office considered very seriously whether we could afford to build towers in Washington Square. We know how expensive towers can get. We decided to build them mostly because of urban scale. We have found in similar projects that slabs create a different kind of scale from towers. Slabs enclose whereas towers do not enclose. This would indicate that, when we want to make a transition of scale between three story row houses and high rise, towers are a much better element than slabs. As soon as you get above six stories you get a high-rise building and the larger it gets the more impressive it gets. This is the reason why the first scheme for Lake Meadows was so successful compared to the second scheme.

24. J.L. Sert (Dean of the Graduate School of Design, Harvard University). For the richness of the visual experience there is no doubt that by combining high and low elements and by carefully differentiating them, as in the Philadelphia scheme, you get something more exciting - more varied. You do have possibly two different scales: the scale of the lower building creating smaller spaces and the scale of the free standing building acting as an echo between great distances and as a directive to certain points of the scheme. The architectural features of the Washington Square project are in many respects similar to the Gratiot Redevelopment in Detroit. They are Miesian in character. But I believe they are far better put together and related in a more urban pattern. Maybe this was helped by the remnants of the old city which are being retained. I consider the Gratiot scheme has one great drawback. It is a very loose scheme. It is not a tightly woven urban pattern. For me there are errors in the grouping of the small houses. I agree with Willo von Moltke that the roofscape is a problem and I would add that the "curtain-scape" will provide another great



GRATIOT REDEVELOPMENT PROJECT

0 50' 100' 200'

problem! I do not see why two rows of houses across a rather narrow cul-de-sac should have these wide views. I do not see why more of the land is not given to smaller court areas properly fenced, which would be an attraction to the scheme, which would tie the lower elements much closer together and which would take out of public maintenance a great amount of land.

25. James Murray (Architect, Toronto, Canada). I have been somewhat appalled at the dedication of these schemes to the high-rise apartments. How important or how unimportant is it to the in-town dweller to have his own private component of outdoor space, rather than an elegant setting for an elegant tower? What is the maximum density to which the American environment can be developed? I had an opportunity a while back to study schemes both here and in Europe, and the new growth outside of Rotterdam comes particularly to mind. This is being executed at a density higher than the silver towers we are producing, but I recall private backyards, private spaces and courts filled with happy three dimensional Dutch people.

26. Ed Bacon. I think most of us visualize high-rise as an essential and integral part of neighborhood design. I think this is fairly expressed in our plans, but it is weakened by the fact that they do not show the very substantial area around these towers, in which we are carrying forward a program of rehabilitatiting existing two and three-story houses with private backyard gardens. But I think that in order to achieve the denseness which Dean Sert mentions (a proposition with which I agree), it is perfectly proper to build a certain proportion of high rise buildings for the families which fit into them.

27. David Wallace (Director of the Planning Council of Greater Baltimore). I would like to make a plea for the greater recognition by the designer of the programming. You cannot kick people around like garbage and have them disappear. They have got to land on some piece of ground or other. If we are talking about inner city land, the question of high-rise vs. low-rise, is inevitably related to the total housing supply that the designer ought to address himself to. You can design high density on the one hand with related community amenities, and you can design low-density on the outskirts, but if you are running out of land, the sooner the designer addresses himself to the variety of forms, to the achievement of high density in high buildings, the sooner we can have some flexibility in the form of our cities.

28. Oscar Stonorov (Architect, Philadelphia). I remember a number of people here who were just as much in love with slabs as they are now in love with towers. How towers can be just as tyrannical in their influence on space as the Barcelona chair by Mies, which can so upset a living room when put off its master-appointed location that makes the room completely unbearable. I think that these tyrannical shapes, like the tower or the slab, or a combination (as they have been praised in the churchyards of the schools) have taken control of design production. I was frightfully

shocked when I saw the architecture for living in Mies' row houses in the Gratiot scheme. I do not know how anyone can defend a democratic ideal which shows no difference in the human form of living from that in an office building. Men, women and children have finally to occupy these buildings. This form of fascist waffle design going to the sky gives no reflection of the type of community living to which I think urban design should be dedicated.

RELATIONS OF BUILDINGS AND OPEN SPACE.

29. The three schemes which have particularly relevant points in regard to this topic are the Gratiot Redevelopment in Detroit, the Lake Meadows plan in Chicago (both of which were also significant in regard to the problems of relation of high and low buildings) and the Don Mills scheme in Toronto.

30. The panel studying the Gratiot Redevelopment raised specific points about the density and the distinction between public and private open space. They raised the question whether, with a gross density of 24 and a net density of 36, the net densities should not have been higher to justify the inclusion of a 19-acre park. They felt that the project also lacked sufficient definition between private space and public space and, that this detracted from the urban quality of the design and created many maintenance problems.

31. The Lake Meadows study panel questioned the goal of the project to create an oasis in the middle of the South Side. They doubted whether this has resulted in a good urban solution, and whether it was possible to reserve the open space for the use of the inhabitants of the project if it weren't fenced.

32. The study panel for Don Mills (Huson Jackson, Macklin Hancock - the designer, Hans Blumenfeld, Matthew Lawson, Anatole Solow, Robert Geddes, James Murray, James Turner, Sam Stevens, and R. Kluver) raised seven points criticising the design of this new town, surrounded on three sides by a greenbelt of permanent public open space.

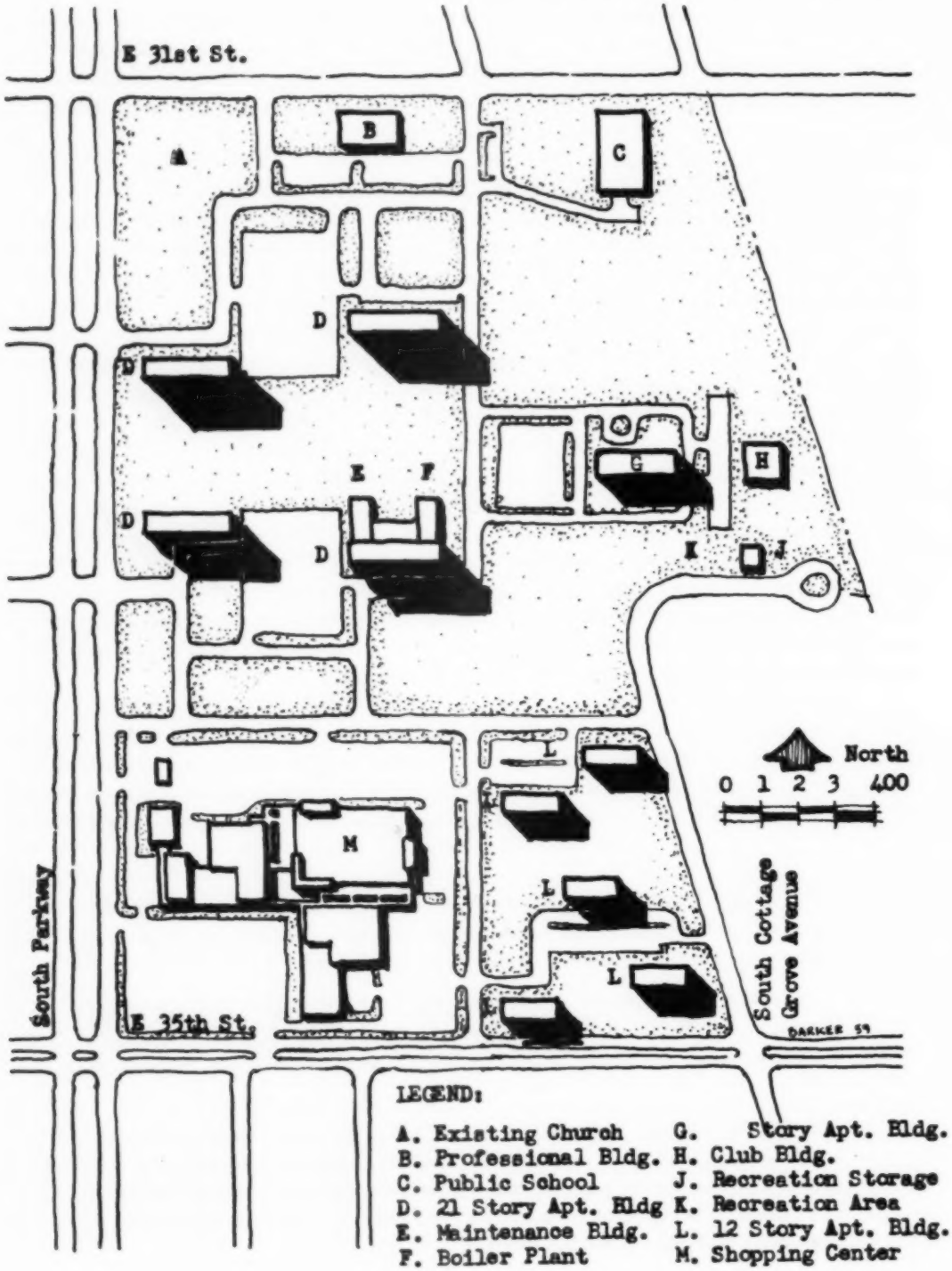
a. The township required 66' wide streets plus a 25' set back. This was wasteful of land and placed houses on opposite sides of the street out of architectural contact.

b. The result fell between two schools: the architectural space was not controlled, as in a closely built area; on the other hand the houses were not set far enough apart to create their own scale as free standing individual units.

c. Some attempts had been made to compose houses into related groups and these could have been pushed further. Generally however, opposition of the financiers and the effects of building codes which prohibited two adjacent houses to "look alike" imposed a kind of regimented anarchy on the project.

LAKE MEADOWS
Chicago, Illinois

Skidmore, Owings & Merrill - Architects



LEGEND:

A. Existing Church
B. Professional Bldg.
C. Public School
D. 21 Story Apt. Bldg
E. Maintenance Bldg.
F. Boiler Plant
G. Story Apt. Bldg.
H. Club Bldg.
J. Recreation Storage
K. Recreation Area
L. 12 Story Apt. Bldg.
M. Shopping Center

d. The attempt to stagger the set backs did not register in such wide and curving street spaces and added confusion rather than variety.

e. Many uncontrolled views occurred between each house and its neighbor, permitting undesired views of the backs of the houses behind.

f. The closeness of many houses on their 60 x 110 foot lots caused adjacent walls to be blank. Going one step further, these walls might have been attached without loss of essential privacy and general gain in the distribution of open and closed spaces.

g. Finally, the row house neighborhoods generally succeeded better in forming a visual environment; partly because they were rental units with private streets which did not have to conform to town widths and setbacks, and partly because the individual buildings were larger and could be brought into an architectural relationship.

33. Serge Chermayeff. Two projects have produced an enormous amount of uninhabited land wherein there is no event likely to draw motion of people. In other words, there is no dynamic or urban intercourse induced by these vast spaces. This is what makes nonsense out of the Lake Meadows and the Gratiot schemes. They are uninhabited.

34. Robert Geddes (Professor of Architecture, Philadelphia). I would like to point out a very strange similarity between the Don Mills and Lake Meadows schemes - at absolute ends of the pole. Don Mills, to its credit, is the only presentation which faces up to the majority, to the overwhelming problem of a single family house. Don Mills faced up to the problem of a single house and Lake Meadows faced up to the problem of a social demand and an economic return by using a single type of building carried to its logical extreme. The major fault we have found in both cases is that there is too much land for the kind of building involved. The Lake Meadows development seems to have open spaces between the buildings which are excessive. It is the result of a mechanical attitude towards building heights and the space between buildings. The Don Mills single-family houses also have too much space between the houses; not from side to side, but from back to back and from the front of house to the street, and the middle of the street to the next house. There is just too much land unused; and in both cases, it seems to me, this is the basic flaw in these two projects.

35. John Howard (Professor of City Planning, M.I.T.). It may be poorly arranged but I don't agree that there are more square feet of land per family than an active family with school age kids can make good use of.

GSD, Harvard University. General report... third urban design conference --10

36. Robert Geddes. I don't think it is a quantitative thing, I think it is a qualitative thing. It has not to do with the amount of land in numbers, but where that land is placed. There is too much space from the house to the street in the case of Don Mills.

37. Macklin Hancock (Designer, Don Mills). There is no doubt about it. There is too much land in the front of the buildings. That space could be much more effectively used in sub-divided courtyards - which is the kind of approach we would have taken at Don Mills had we been able to. I think what we recognized was, the best we could do there was to make a transitional stage between junk suburbia and Dean Sert's beautiful courtyard house.

38. Ed Bacon. I will disagree with my colleague Jack Howard: there is too much land in Don Mills, even in the absolute sense. For the requirements of the family with small children, you need a very small private yard to take care of the children up to 7 or 8 and the adults. When a child gets to 9 or 11 he bursts the bounds. Doubling or tripling the space doesn't do the slightest bit of good, children of this age have got to have real open space to roam through.

39. Sidney Shurcliff (Landscape Architect, Boston). If I have heard right, the average lot in Don Mills runs to something like 7,000 square feet. Around Boston, a great many of the suburban areas are in competition to see who can pass zoning laws the fastest for ever increasingly larger lot sizes. As a result, at the present time, the only available lots are around 20,000 feet. The big sub-dividers are going at a rate of several thousand houses a year in this area. We ought to get something out of these conferences that might save a few small lots.

40. Robert Little (Architect, Cleveland). Perhaps we should try and conclude that this group either does or does not recommend the reduction of lot sizes, and the elimination in many communities of the side lot requirement and the front lot requirement - the set back which drives lots of us crazy. Maybe we should say so, why not?

41. Macklin Hancock. I too, would like to find out what we are going to do with three quarters of our urban areas which are in inter-urban expansion on the peripherys. I would also like to correct another impression. While the average single family lot at Don Mills is 60 x 100, one must remember that 40 percent of the people there live in multi-family dwellings; row houses, or so-called garden courts.

42. Robert Geddes. We have two minimum standards to be looked at. The first is the minimum amount of space we need in a very tight urban, high-density area. Second, is the question of what regulatory standards should be set for out-lying, suburban areas. Both these should be looked at in terms of what the impact would be on the countryside as a whole.

DON MILLS, TORONTO

GSD, Harvard University. General report... third urban design conference --11

43. John Howard. People are different and thank God for it. They come in all different ages and family sizes with all different desires. If we are going to provide a good physical environment for a society which tolerates difference, we have got to offer people a range of choices. We have got to offer the people who want one acre lot a one acre lot, as well as cater for the person who wants a 20 square foot rear yard or the person who wants to live strictly anonymously in a 600-family beehive. There is no such thing as a minimum or an optimum or a maximum which you can say applies to the urban population of the U.S. Let's not kid ourselves or anybody else that we could ever come up with that kind of standard.

44. Sidney Schurcliff. I judge there is quite a little sentiment here for the small space, yet the moment you get into suburban areas you can't get anyone to believe you. The small lot has almost disappeared. Go try to buy one! I'd like to be able to quote this group as saying that the small lot is both architecturally and artistically desirable.

45. Garrett Eckbo (Landscape architect, California). People go to the suburbs to escape from anonymity and congestion in the city - and the size of the lot is just a way of building up a buffer around themselves. The only way to get the reduction of lot sizes is to produce a control of community patterns that people can rely on: that they are willing to give up this kind of security for.

46. But, what I really want to talk about is trees. Trees and low-rise buildings are about the same scale design-wise and they work together in this organization of space. But I don't think it is taken seriously, if you judge by the design drawings: not taken as seriously as the buildings. That is, if you say the trees and buildings are equal partners in design, this is not recognized in fact, because the buildings are very carefully worked out and the trees are shown as though they were all alike. I would like to point out that there is a great variation in trees. They run between 15 feet high and 70 or 80 or more - that is 7 or 8 storeys - and they have great differences in their shade and structure and so on. I don't think an urban design can be complete until the trees are organized as carefully as the buildings. And when you come to a one-story scale, a suburban scale, the trees are really superior, and it is the trees which can create a suburban landscape. Indeed they are about the only way you can create a suburban landscape that has any scale.

47. The analysis of the various schemes by the panels was summed up by the discussion chairman Robert Geddes in the following terms: the dominant problem of Vallingby seems to be its deliberate - and almost overly deliberate - attempts at variety; in Don Mills, the unresolved problem of the single family house.

48. In Gratiot, the problem was the lack of expression and understanding of the differences between high and low buildings in terms of their space requirements, the skin, the roof and the human aspiration and aspects of their inhabitants; in Lake Meadows, the problem was an equally mechanical attitude, but in this case it was the approach towards orientation and spacing between buildings which again was not mainly based on human requirements.

49. The strength of Mill Creek lies in large measure in the role of the developer in the programming, and the kind of influence enlightened developers can have on the programming and realization of this sort of project. The greatest value of the Philadelphia Washington Square project is in its linkage with the past and its spatial linkages which create focal points and make the edges not certain, which is a great advantage. This is a project that does not imply a completion date in itself at all, because it started in the 18th century, has 19th and 20th century buildings and can still grow on to have buildings of the future.

50. Martin Meyerson (Professor City Planning, Harvard University) summed up the views of many, when he said: Here and there we have suggested things that have not yet been considered; the high density low-rise house; the question of how to interpret the great American dream of depending completely on the automobile; and a high rise structure that isn't all front and no back. There are many things that we just haven't done in urban design because in the new technology of our century, urban design is almost a phenomenom of the post-war years. With many of my colleagues here I fully expect that the great advances in urban design will come from those who are now students and that the examples we have seen at this Congress will look very primitive as the years go on. I only hope that an urban design conference 10 years from now can have a more exciting array of programs to deal with.

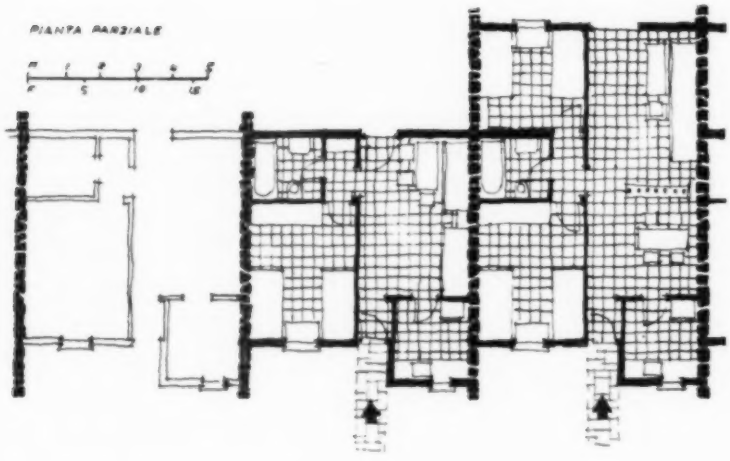
Cocchia, Fabrizio

A VILLAGE FOR IMMIGRANTS IN NAZARETH

L'architettura, 42, no. 12, April 1959, pp. 838-839. Illustrations.

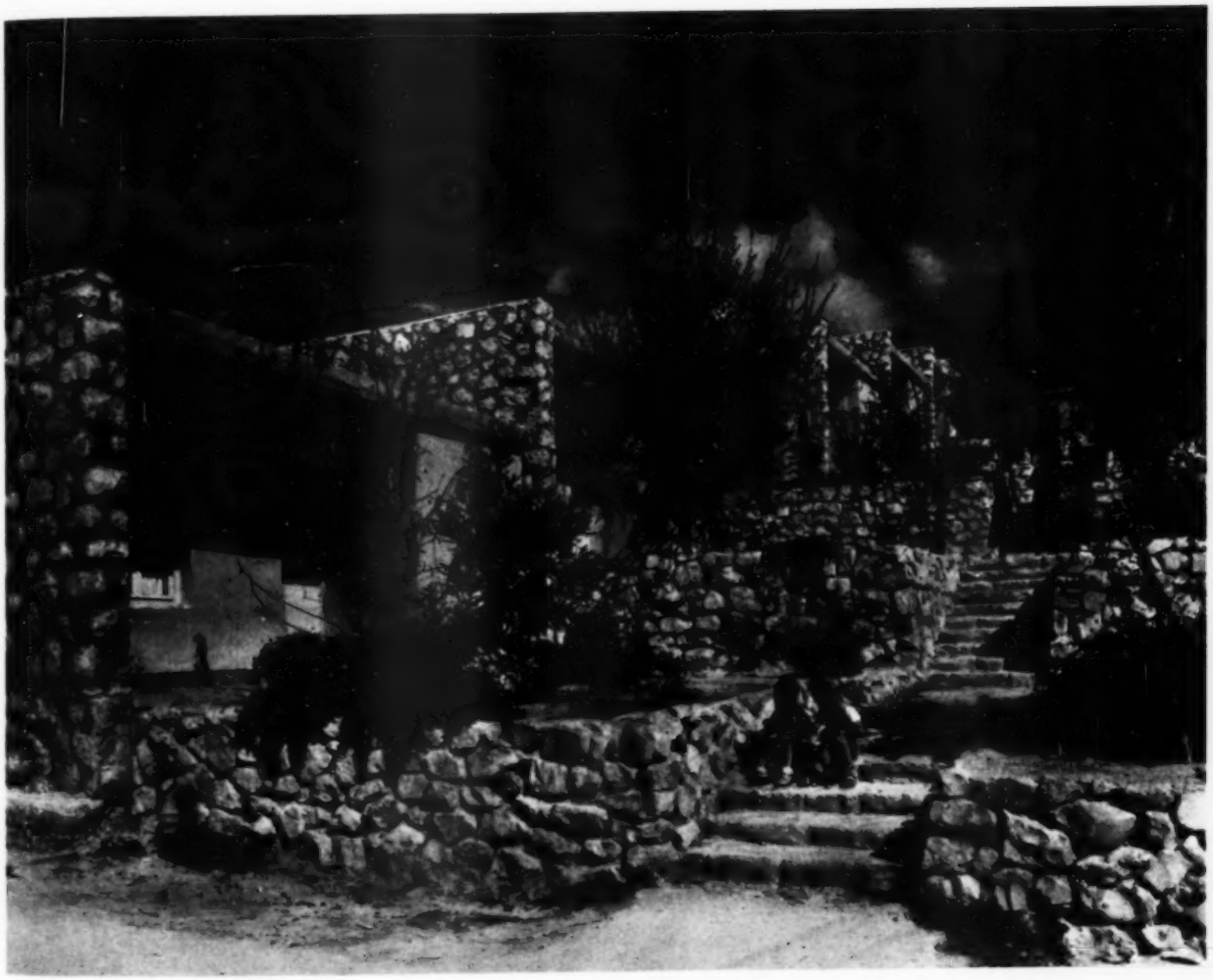
711.437 : 711.134 (213)

1. Arieh Sharon and Benjamin Idelson are the architects of this new village for immigrants in Nazareth. They have used very cheap stone construction, placing rows of the houses of native stone up the hill. Thus, this provides an example of the use of a hilly site, native materials, and cheap construction to create a pleasant environment.



Nella pagina a sinistra, in alto: una strada pedonale a gradoni. *In basso*: i blocchi di appartamenti. *In questa pagina, sopra*: veduta generale del villaggio con la città di Nazareth a sinistra. *Sotto*: case unifamiliari.

L'architettura 42, no. 12, April 1959.



Cheecol Processes Limited, Kneeland House, 644 Oxford Road, Reading, Berks, England.
CHEE-DEX SYSTEM OF CONSTRUCTION
Illustrated brochure.
666.973.6 : 693.97 (100)

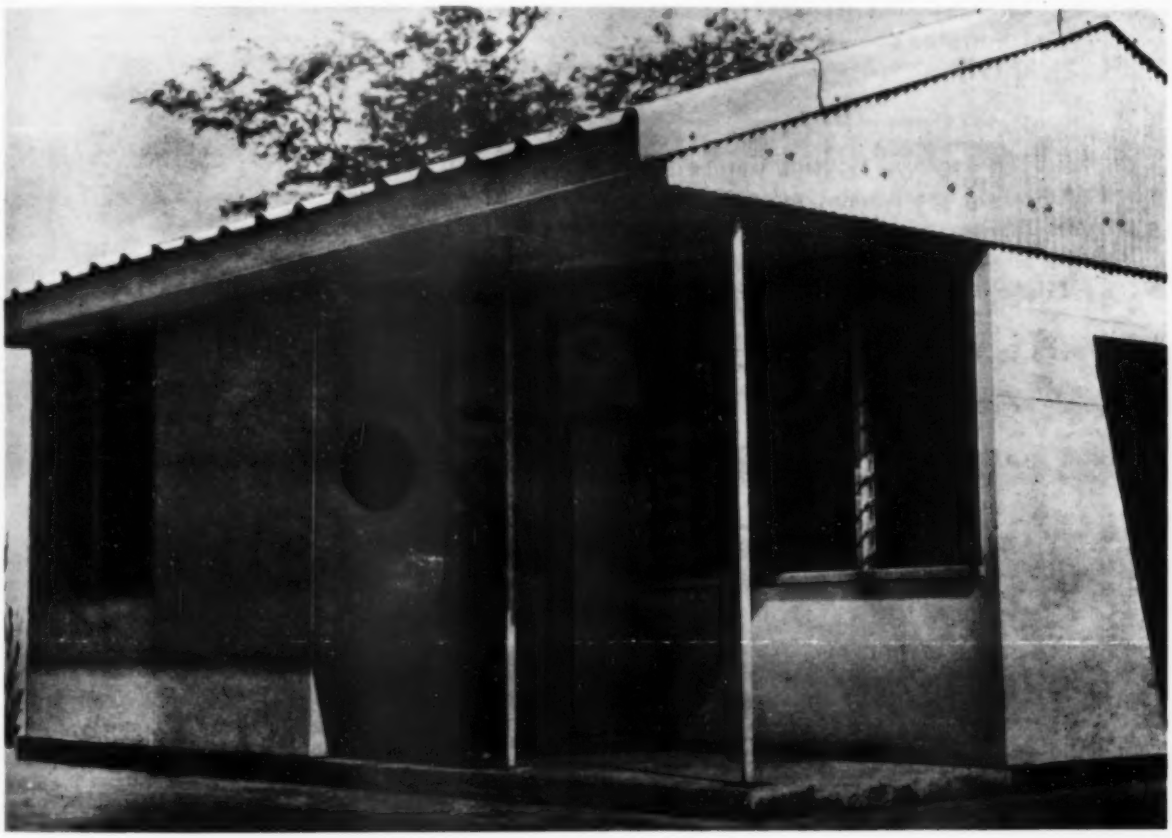
1. The Chee-dex system of construction is the result of a joint investigation of world wide low-cost building requirements by two companies experienced in the constructional field. The aim has been to produce a simple modular building system which can be used largely, yet provides a standard of finish and permanence. Chee-dex relies for its simplicity on two basic materials -- Dexion Slotted Angled and Cheecolite lightweight waterproof concrete.

2. Dexion Slotted angle is used for the structural framework. This is a patented, rust-protected steel angle perforated with a series of slots and holes -- and supplied in standard lengths for cutting and bolting together on site. The simple bolt connections call for nothing more than a pair of spanners, and the nuts and bolts supplied with the angle. Dexion is readily available in most world markets, in compact packages easy to transport and handle.

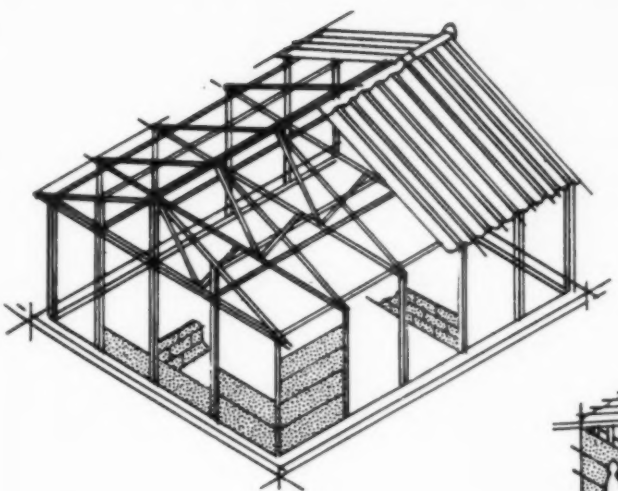
3. Cheecolite lightweight waterproof concrete is used for the in-fill wall panels. Cheecolite has a basis of cement, sand, and water; then a frothing agent is added, and the mix prepared in a whisking machine. The cellular structure of Cheecolite gives the chee-dex panels lightness (at 85 lb per cubic foot they are under two-thirds the weight of dense concrete). They also provide thermal and acoustic insulation, and waterproofing which eliminates the necessity for external rendering.

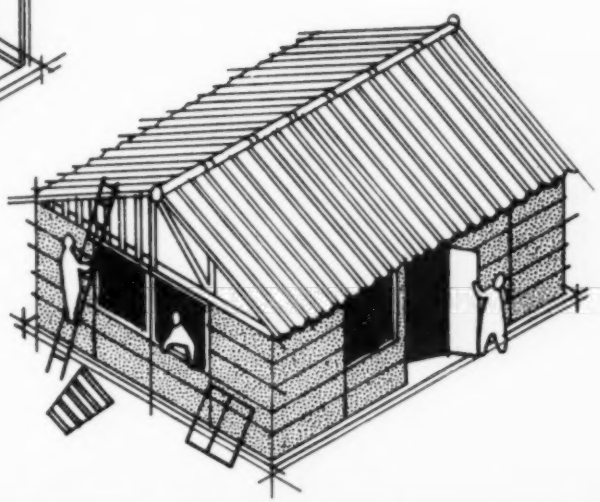
4. Depending on ground conditions, light foundations are normally sufficient. Erect Bexion framework and add roof cladding, then insert Cheecolite panels between uprights, securing with galvanised clips and sealing joints between panels with mastic. Internal partition can be built of Cheecolite blocks or other suitable walling. Attach window and door units to framework; face gable ends with material similar to roof cladding. No special rendering is necessary.

Cheecol Processes Limited. Chee-Dex system of construction.



The four-room single storey house shown here was designed to the requirements of the Malayan Housing Board.





Indonesia, Regional Housing Centre, Bandung.
EXPANDABLE HOUSES
Illustrated Booklet.
728.37 (91)

1. The Regional Housing Centre, Bandung, has published a booklet illustrating four house types designed to be expandable in accordance with the growth of family needs and family incomes. Each house starts with one bedroom and increases to three; plans are given in the booklet for the three stages of each type.

Fig. 8 The first and third stages of the house type shown in Figs. 5, 6 and 7.

Gt. Britain, Dept. of Scientific and Industrial Research... Overseas Building Notes, No. 59, April 1959.

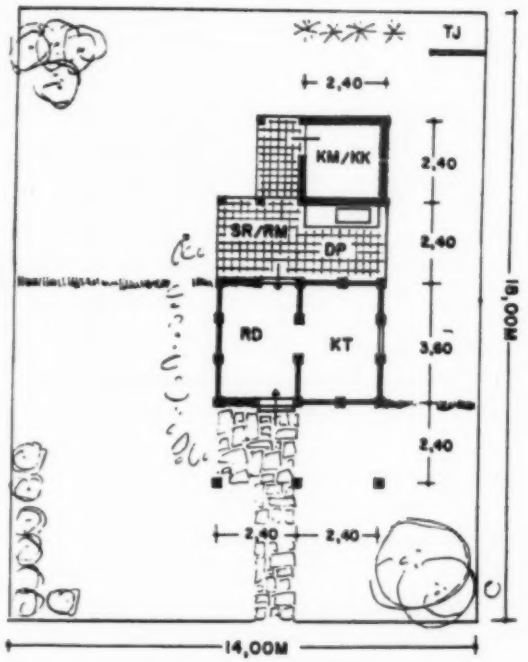


Fig. 5 The first stage: one bedroom.

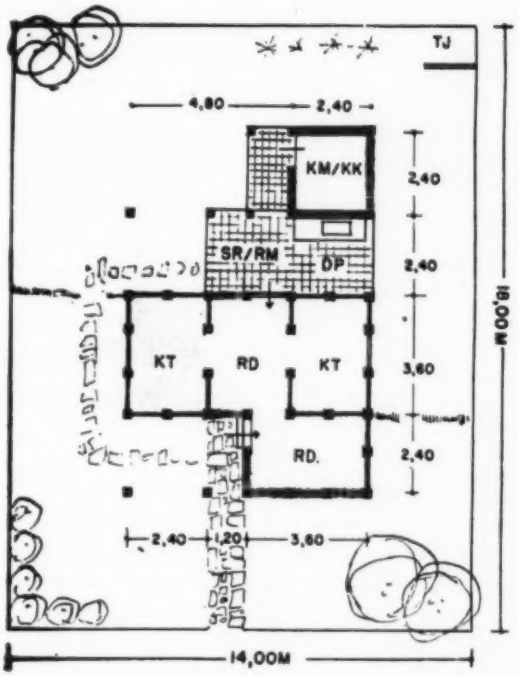


Fig. 6 The second stage: two more rooms are added.

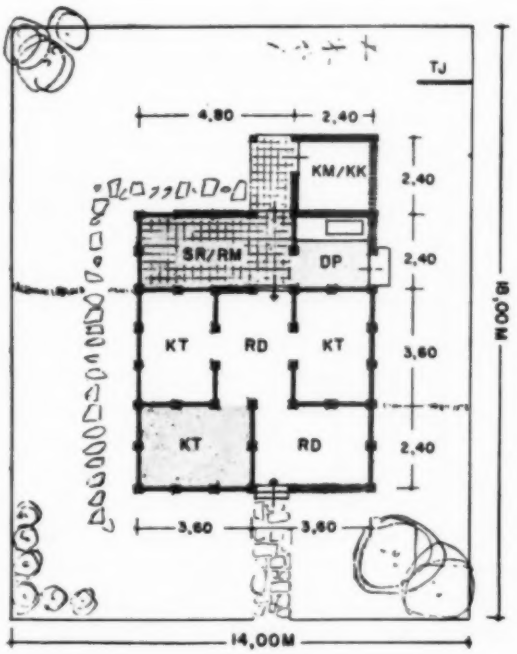


Fig. 7 The third stage: the third bedroom is added, with other enlargements.

KT = bedroom
RD = living room
RM = dining room
DP = kitchen
GD = storage room
SR = verandah
KM = bathroom
KK = W.C.
TJ = washing place

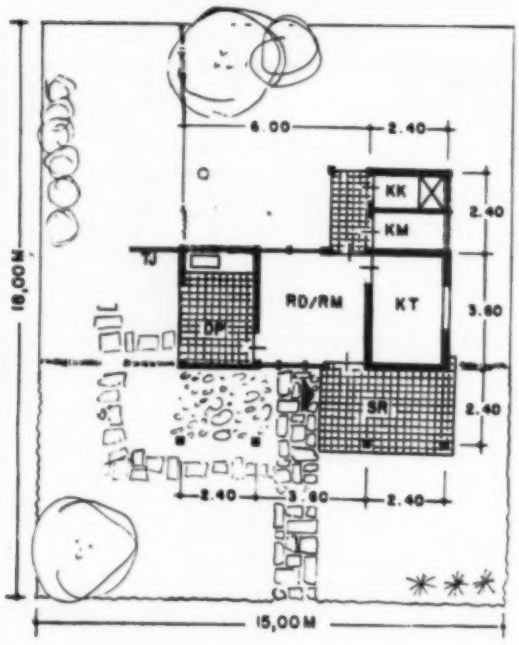


Fig. 9 Another house type – the first stage.

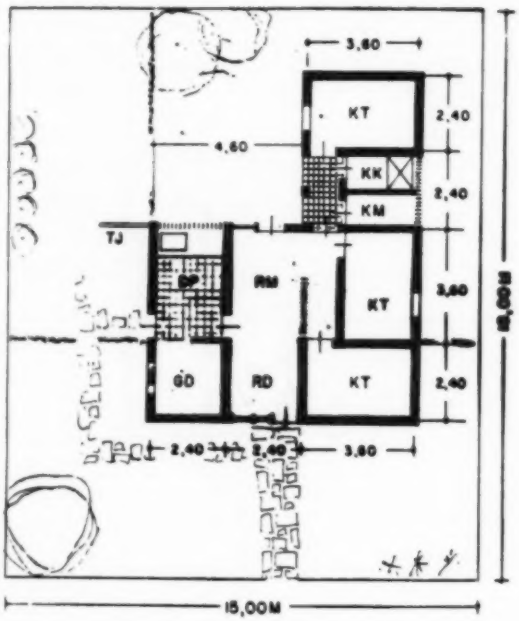


Fig. 10 The third stage of the house type shown in Fig. 9.

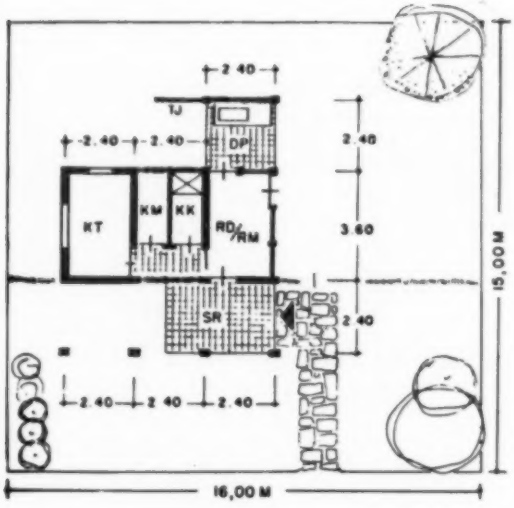


Fig. 11 Stage One of another house type

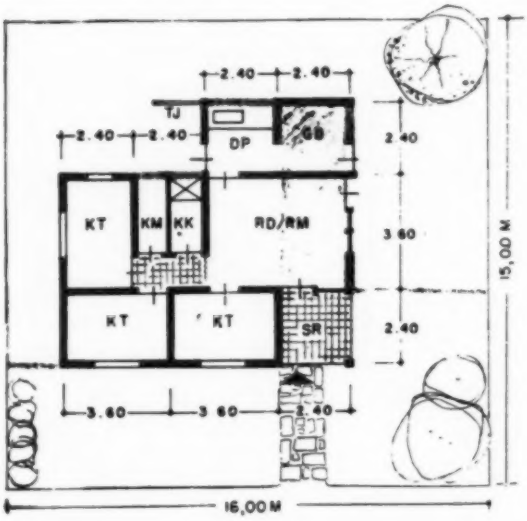


Fig. 12 The third stage of the house type shown in Fig. 11

Sweet, Cyril.
MODULAR COORDINATION AND BUILDING COSTS
The Modular Quarterly, Spring, 1959, pp. 21-22.
721.013 (100)

1. Cyril Sweet, Chairman of the English Cost Research Panel of the Royal Institution of Chartered Surveyors, analyzes the effects of modular coordination from three aspects; as it may affect the cost actions of:

1. Material suppliers,
2. Building contractors, and
3. Architects.

This article presents a different factor in the development of a modular design system such as that proposed by Bruce Martin and published monthly in EKISTICS since April, 1959.

2. One of the claims which has been made for modular co-ordination is that it will standardize many products of building material suppliers, and this should lead to economies in production, eventually resulting in a lowering of the cost of building materials. The degree of standardization brought about by modular coordination is limited. It standardizes dimensions, but does not influence many other factors, e.g. the quality of design. For example, with a component such as joinery fittings, modular coordination would require, say, a dresser and wall cabinet to have dimensions of a multiple of 4"; this would not necessarily entail a standard number of drawers. Complete standardization of product is necessary to enjoy full economic advantages. Economies result from the standardization, repetition, and simplification of the production process, as well as from the standardized design of the actual product.

3. The implication of modular coordination may have an adverse effect on building materials costs. The production of all goods to a predetermined module may make the design of certain items inherently more expensive than they need be. For example, electrical fittings may provide perfectly satisfactory standards of performance and safety when designed at say 3" wide, or of multiples of less than the standard module of 4". Any extra cost of the item may of course be offset by ease of installation or by a saving in builder's work in connection with this service. Also, where all products are standardized (reflecting one module), then several of the problems of handling and transporting materials may be more simple to solve.

4. It is perhaps to savings in costs on building operations that modular coordination must look for its main economic justification. With 40 percent of site costs accounted for by labour charges, there is little doubt that there is room for savings in erection costs. The raison d'être of modular coordination is that it facilitates erection. Where a building comprises mainly dry construction, the effect on erection problems of modular coordination is obviously significant. With mainly wet construction, the need for modular coordination is less significant.

5. If modular coorainationsucceeds in solving the major problems of prefabricated construction, then the environment of site operations which affects each item of cost will be profoundly altered. Modular coordination and prefabrication envisage an entirely diffarent set of circumstances on site, where work proceeds along radically different lines to traditional mainly wet construction; following more along the lines of factory production. Under these conditions an entirely new set of costing circumstances would doubtless pravail. Until these circumstances become clear, however, it will not be possible to juage accurately the cost effects of modular coordination on building operations. The possibility of the widespread adoption of modular building, leading to prefabrication (factory construction of component parts) depends in the first instance upon the solution of the many technical problems involved in the concept of modular-coordinated design.

6. Prefabrication techniques transfer much of the site labour into the factory. With such a system there will obviously be an increase in the number of specialist firms involved in a building project. With much of the building accounted for by specialist subcontractors, the problems of site coorainationbecome very acute and the position of the main contractor very difficult. This is only one of several administrative problems involved in modular construction, and again one on whose resolution depends the emergence of the full cost consequences of modular coordination. Whatever final costs emerge however, it should not be forgotten that any new technique of building will contribute towards a general reauction of costs only if it provides a more economic solution than traditional builaing methods.

7. There may be several minor cost consequences of module design which will affect costs determined at design stage. Maintaining each component in a module grid imposes a design discipline, which might contribute to a simplification ana consistency of several items in design. For example, maintaining a module grid could involve the repetitious design of each flight and each step in a staircase. If this were so, units could be more economically precast, or, if cast in situ, costs of shuttering might be reduced.

8. Perhaps the main point which emerges at this stage from a discussion of the cost consequences of modular coordination is that its effects are very uncertain. As the most important cost consequences of modular coordination will not become clear until many of the technical questions are solved, a full assessment of the cost consequences of modular coordination must wait until after their resolution.

Nash, Manning
SOME SOCIAL AND CULTURAL ASPECTS OF ECONOMIC DEVELOPMENT
Economic Development and Cultural Change, Vol. VII, No. 2, January, 1959, pp. 137-150. Diagrams.
338 : 3 (100) (59)

1. Manning Nash first presented this paper at a Seminar on Indicators and Characteristics of Underdevelopment at the University of Chicago which was held under joint sponsorship of the Research Center in Economic Development and Cultural Change and the Department of Geography of that university. On the staff of the Research Center in Economic Development and Cultural Change, Mr. Nash has recently published a book describing and analyzing an American Indian community in Guatemala which has successfully moved from a simple farm technology to operating one of the Central America's largest textile mills. With a background of studying this practical case (described in Machine Maya) and his theoretical knowledge, Mr. Nash is well prepared to present a technique of appraising specific countries or regions in their social and cultural ability to undertake economic development. This study seems particularly appropriate for the analysis of developing countries in terms of EKISTICS.

2. The aim of this paper is to replace the omnibus category of an "underdeveloped country or region" with a set of concepts which discriminates among the existing varieties. The diagnostic scheme is based on social and cultural features of low per capita income populations.

3. Mr. Nash seeks to find a balance between empirical complexity and analytical simplification by developing a notion of the areas of social and cultural life most intimately related to and strategic for social change in the direction of increased wealth and income. His procedure is to describe a series of cultural patterns and social structures at a level of abstraction which permits their identification in more than one society or one culture. The notion or model, he offers is diagnostic, i.e. it is a provision for organizing concepts which can discriminate between existing varieties of underdevelopment, but which is still close enough to reality to encompass a wide variety of data. The cultural and social features of relevance to this scheme are of two kinds:

1. Those which current theory indicates are most pertinent and relevant for the understanding of social change, and

2. Those commonly taken to be intimately connected with the structure and dynamics of the economic sub-system of a society. Illustrative material is used from Burma and Cambodia, so that a categorization on the basis of the concepts can be inspected.

Nash, Manning. Some social and cultural aspects of economic development --2

4. Economic development is a discontinuous process which has been divided into three stages. The central period is a stage of "take-off" , the break with the relatively stagnant or slow-growing economic past . Prior to the "take-off" period is a time of building resources and skills, while subsequent to the take-off is a state of self-sustained growth.

5. It is generally conceded that the "take-off" is led by a particular segment of society, either an elite, as in Japan, or a class blocked in social or economic mobility, as in the rise of the bourgeoisie in Western Europe. The success of the dissident social segment and elitist re-orientation of goals is closely tied to the group's administrative abilities and to their skills in enlisting the energies and sentiments of a good part of the population in a program of development.

6. If we accept the widely held generalization that economic development involves some industrialization and some use of new technology, then part of the process is dependent upon the relations of the developing region to the developed countries, in which the technology, industry, and skill for mechanization is to be found and from whom they must, at least initially, borrow heavily.

7. It is possible to consider economic development as a process of social and cultural change, as well as technological advance. The process of economic development is analytically composed of three linked kinds of social action:

a. The choice to institute changes and to seek greater wealth and income.

b. The bringing together of the means and facilities to implement the choice.

c. The organization of social and cultural life so that growth is a built-in feature of the social system.

8. What in a people's life is likely to lead to a choice for social change in the direction of development?

How are human and non-human resources aggregated or developed?

What mode of social integration is possible as an emergent for self-sustained growth?

9. The first cultural feature to be considered in terms of a social decision to undertake development is the pattern of stratification. If the wealth, power, and prestige of a society is strongly polarized between two groups with relatively little mobility between them, it appears that social change on the structural level is unlikely and that new economic opportunities will not be a chief concern of the

dominant group and hardly even a perception of the subordinate group. To make this concrete, consider Burma. In Burma, the elite is based in urban locales and characterized by an incipient class system on Western lines. This group is dominant over a rural peasantry of some 16 millions. But there are channels of social mobility between classes in the cities, and from countryside to town. Educational institutions, both religious and secular, offer means of moving up the hierarchy, and there exists a fairly defined mode of social mobility. Burma, then is a society with some social mobility, incomplete polarization of wealth, power, and prestige, and therefore has the social environment to induce some group to seek social and cultural change. Cambodia, another example, exhibits a pattern of stratification like Burma's but with the added complication of an inherited nobility, in some conflict with the urban segments seeking development. Burma's path, on structural grounds, should be easier than Cambodia's, though the resistance to change in Cambodia is not likely to be extreme.

10. Apart from the gradation of stratification is the system of social values which justify, explain, and define social position and the means of attaining it. The repetitiveness over time of patterns of social action is in part a condition for the stability of the value aspect of the social system. Since both Burma and Cambodia have been under foreign domination and both have recently won independence, we may expect, and in fact find, that given this value hierarchy, the elite is able to emphasize goals of economic development and to incorporate new aspirations. The indices of values conducive to development (here combined with the stratification aspect) are these:

a. Conflicting religious systems, philosophies, and world views in a society indicate the malleability of the value complex and the fact that experience may be variably determined.

b. If the prevailing distribution of wealth, power, and prestige is in some contradition to the value pattern, then social change and new economic patterns are likely to find sanction among a sizeable segment.

11. Both Burma and Cambodia are Theravada Buddhist countries, and the overwhelming majority of the population is Buddhist. Buddhism's otherworldliness is not in conflict with success in this world, and the twelve-fold path has many roads which may lead to development. In addition to the religious ideology is the presence of Western beliefs in material progress, combined with socialist and nationalist ideologies resulting from the wars for independence. In Burma, there is a social group in the cities aiming to bring about an economically abundant "welfare state". In Cambodia, too, there exists the range of values which would permit accumulation of wealth. In both countries, then, there are "spearhead" groups for economic development.

12. A social segment whose conditions of mobility involve others in the society rising in the social scale (either by recruitment, as in the European experience, or by abolition of inherited obstacles to mobility, as India is doing, in part) stands a better chance of perceiving and acting upon new economic opportunity simply because the social risk is less. In this connection, a nationalist ideology provides a potent impulse toward change and development as a course of action; however, it may inhibit the successful organization of growth.

13. In Burma, the elite group interested in development is in a position to symbolize the aspirations of the whole nation. The organization of the elite group, with its close ties between secular and religious offices, effectively communicates the nationalist, development ideology to the rural peasantry. Buddhism is the vehicle of symbolic identification between the mass of peasants and the development-oriented elite. In Cambodia, the elite group is less well organized, and the effective development and transmission of development ideologies is less.

14. In forging a national consciousness oriented toward development goals, Burma appears slightly more advanced than Cambodia. The economically powerful Chinese minorities are more closely integrated into the economic and administrative structure of Burma than they are in Cambodia. Efforts are being made in Cambodia to lessen the dependence of the rural peasantry on the Chinese commercial segment, but so far, the native elite is not well enough organized, socially or ideologically, to modify the structure greatly. The social and cultural pluralism of Cambodian society is greater than that of Burman society, and the national identification of Cambodians is apparently less than in Burma. Consequently, the spatial spread of development drives is more restricted in Cambodia, as is the extent of the market.

15. Given the social decision to undertake social change and development, how can the segment which is the leading group get sufficient means to significantly alter the level of living? This is usually phrased as the problem of capital formation in underdeveloped areas. There are really three problems subsumed in the notion of capital formation:

1. Amount of savings,
2. Form of savings, and
3. Channelling savings into productive investments.

The amount of savings is firstly a function of the absolute level of wealth of society, and secondly of the values and institutions of a culture in relation to patterns of consumption, time perspective, and agencies of accumulation.

Nash, Manning. Some social and cultural aspects of economic development --5

16. A poor country produces relatively little which is available for uses other than direct personal consumption: its time perspective of investment is likely to be short, and the agencies of aggregation rudimentary. Small peasant farmers, if they make up the bulk of the economically active population, as they do in Burma and Cambodia, do not as individual family or economic units have a large enough level of wealth to permit significant savings. To the extent that a farming family is heavily weighted on the subsistence side of production as against the exchange side, its savings, whatever the level, do not come in the form which is useful or available for reinvestment in technical progress.

17. Given the size, number, and kind of economic units operating in Burma and Cambodia, we must weight farm families on a subsistence - exchange ratio. Non-farm economic units must also be weighted by the attractions for them in investment in productive channels.

18. In the non-rural, non-farming sectors, rates of savings are higher, but the size of the economic units makes the absolute level of any given firm rather small; thereby inhibiting its ability to bear risk or to promote long-range investment. The agencies for accumulating capital -- the joint stock company, the limited liability form of ownership, the stock and securities market, the central banking system -- are not well developed or widespread in either Burma or Cambodia. Significant lumps of capital are hard to come by, relative to the amount of savings which the gross national product might indicate. As institutions for aggregating large amounts of capital become more developed, the closer a society comes to the take-off period. Burma's development corporation, part of the national administrative apparatus, is more highly organized than Cambodia's and serves as a more efficient agency of planning and capital aggregation.

19. Obviously, the government of underdeveloped countries provides one of the chief agencies for the aggregation of capital and for the provision of the legal basis for the emergence of forms of organization capable of forming capital.

20. The abilities of governments to carry out any of these measures depends, in large part, on the degree and kind of national integration. Therefore, the extent to which the territory under consideration is in fact welded into a society by a set of conventional understandings is crucial.

21. The rate of savings, the form of savings, and whether or not they go into productive channels is intimately tied to the social and cultural aspects of a nation, but there is no easy rule for the identification of the institutional means for promoting or inhibiting savings; for their form, and for their allocation to ends conducive to further growth.

Nash, Manning. Some social and cultural aspects of economic and development --6

22. The third category of social action in economic development is the organization of economic activity for self-sustained growth. The relevant dimensions are of two kinds:

1. The development of persons and organizations who will either invent or adapt new technology and new economic organization; and
2. The spread of the market and the increase of scale or productive enterprise.

In these two categories are a host of variables: in the first schools, books, research institutes, literacy, public health, managerial skills, and labor force commitment: in the second the provision of roads, uniform currency, weights, and measures, and the reduction of the use of fraud and coercion in business transactions.

23. In Burma, there exists a tradition of learning, or literacy, and of scholarship. The government is stressing literacy oriented toward some of the literature of daily life and work, rather than the esoteric and religious materials which formerly made up the content of Burmese literacy. In Cambodia, the literacy rate is less and the tradition not as widespread.

24. The government organization involved in providing the social organization of development must prevent the rise of internal monopoly which restricts the market size and creates a larger zone of technological indifference. The royal-client organization of the Cambodian government seems a less promising instrument for these tasks than does the rudimentary parliamentary system of Burma.

25. To assess a society's potential for economic development in terms of meaningful alternatives, these are the diagnostic social and cultural features:

26. <u>The Pattern of Social Stratification</u>

a. The more extreme the polarization of wealth, power, and prestige between classes or social segments, the less likely is new economic opportunity to be perceived or acted upon.

b. The more restricted the channels of social mobility between the top group and the segment just under it, the greater the possibility of the latter group seeking new means of mobility.

c. The greater the gap between the legitimate sanctional means of attaining wealth and the actual ways in which current holders of wealth have attained it, the greater likelihood of accepting structural change.

d. The more frequent the recruitment of lower class members into upper class strata by merit or achievement, the larger the opportunity for seeking development.

27. The Value System

a. The more there are competing ideologies and philosophies, the easier it is to win commitment to development.

b. The greater the stress on nationalism, the more probably it is that development can be made one of the national goals.

c. The greater the value agreement between different segments of the elite, the easier it is to transmit development values.

d. The more varied the definition of the same general complex, from social segment to social segment, the less the social risk for an elite group in de-emphasizing the aspects conducive to development.

28. The Economic Sub-System

a. The more economic units are weighted on the subsistence side of production and the more they are anchored in local, communal organizations, the more difficult it is for them to save or for savings to take a form useful for rapid development.

b. The lower the level of absolute wealth, the shorter the time perspective of investment, the more difficult it is to secure capital for long-run projects.

c. The more developed and varied the agencies of accumulation, the more likely that significant amounts of capital can be productively channeled.

d. The less the market is monopolized, the greater possibility for investment.

e. The more the holders of wealth are involved in production, the more likely they are to respond to new economic opportunities.

29. The Political Sub-System

a. The greater the sovereignty of the government over its territory without the use of coercive instruments, the easier is a program of development.

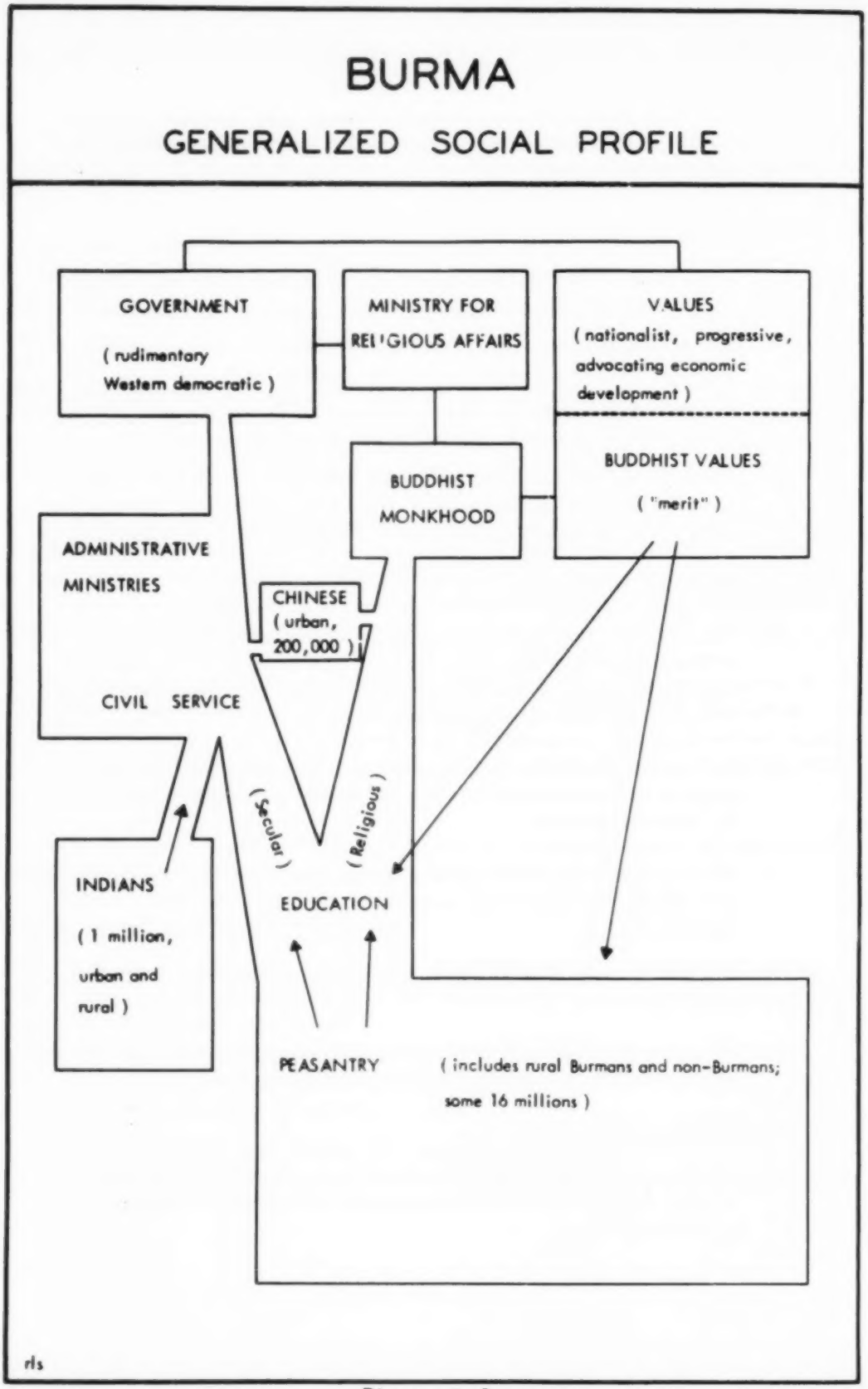


Diagram 1. Burma

Economic Development and Cultural Change, January 1959.

CAMBODIA

GENERALIZED SOCIAL PROFILE

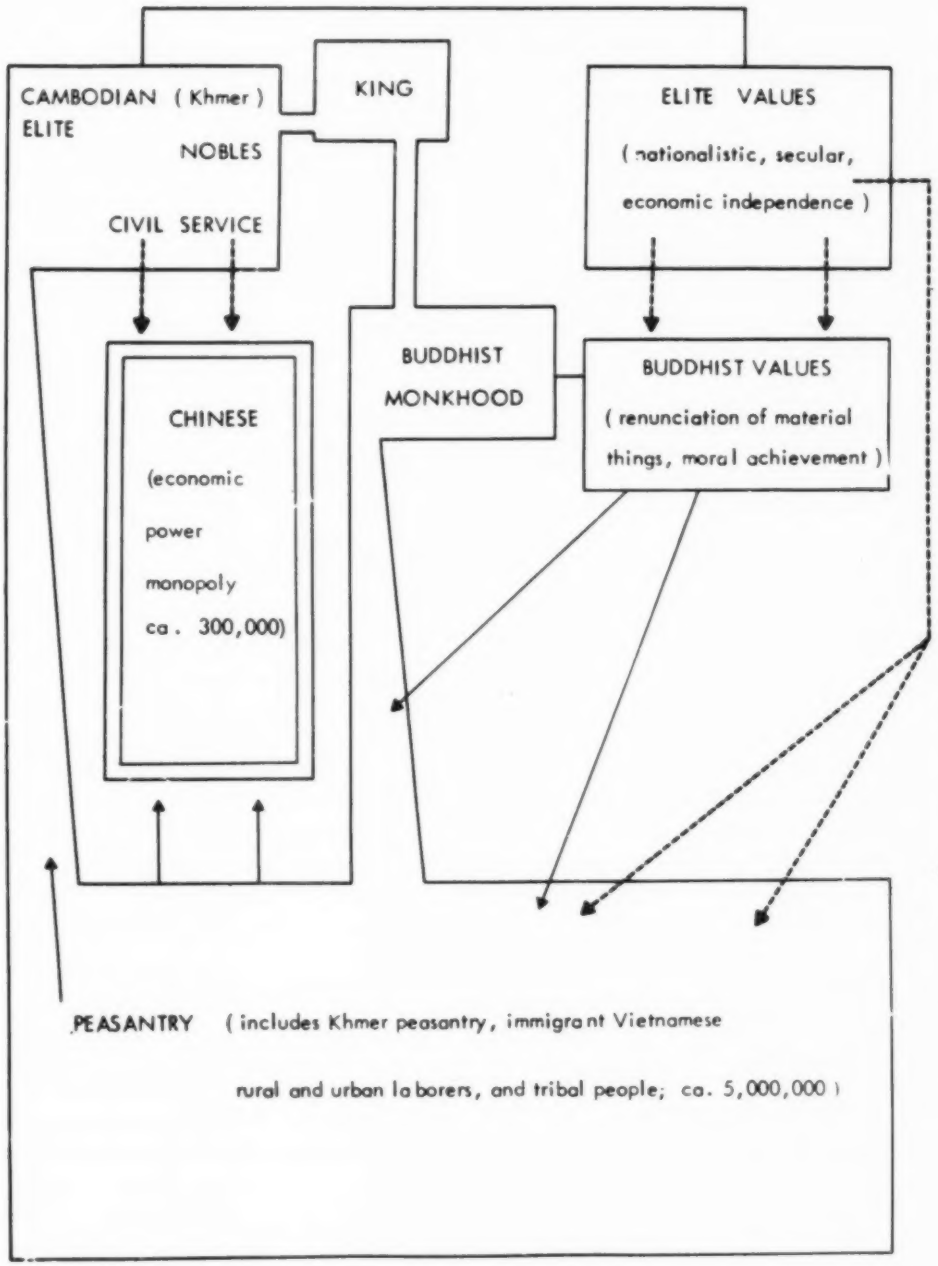


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Diagram 2. Cambodia

b. The more organized the group holding political power, the easier it is to embark on development programs.

c. The greater the allegiance of persons to ideas of the nation, the more likely that development can be undertaken.

d. The greater the width of recruitment into political office, the more likely that development can be organized.

e. The less the ideological cleavage in the elite, the greater the possibility of bureaucratic or non-economic goals.

33. The diagrams are an approximation to making a cultural and social profile of a society in terms of variables enumerated. Burma and Cambodia, according to the profile, belong to the same "species" as far as economic development potential is concerned. Nonetheless, Burma's path appears to be less precarious than Cambodia's.

34. Across the top of the diagrams, it is shown how the elites are divided into political and religious. Connected to these are their corresponding values. Emanating from the elite's structural blocks are the channels of mobility, which depict the hierarchical ladder connecting these sectors to the base of population - the peasantry. The integration of the economically important minority populations in both nations is shown by their direct connections (or cleavages) with other segments or mobility among segments. Solid arrows from the value blocks depict their effective transmission to the peasantry, and broken arrows show that attempts for development are hindered by other values.

35. Organizational contrasts in mobility via educational institutions are evident. The Burma pattern is more closely articulated than the Cambodian, indicating that Burman values are less in conflict with rapid development. The more highly organized governmental agencies for economic development are found in Burma. The block for administration ministries and civil service has the possibility of being more task-oriented than the royal-client form of political organization obtaining in Cambodia. The economically important minority populations are incorporated into administration in Burma, while in Cambodia the economically powerful Chinese are isolated by strong social and cultural barriers from the rest of Cambodian society. The broken arrows from the Cambodian political elite to the Chinese signify that efforts are being made to curtail the economic power of the Chinese, but to date the structure is not much modified. The solid arrows from the Cambodian peasantry to the Chinese minority show the real economic dependence of the peasantry on the Chinese for credit and commercial outlets.

SIAP newsletter

INTERNATIONAL FILM CONTEST ON PLANNING AND HOUSING.

Interamerican Planning Society, San Juan, Puerto Rico. No. 6., May, 1959

1. As part of the program of the 1960 World Planning Congress, an International Film Contest on planning and housing will be held at San Juan, Puerto Rico, to demonstrate the use of high quality films for purposes of graphic illustration. The contest is being arranged by the Organizing Committee of the Congress and is open to individuals, to groups of invidiuals, and to public and private agencies.

2. Films submitted to the Contest must deal essentially with planning or any of its related aspects such as economic development programming, social programming, housing, urban renewal, etc. Commercial advertising films or those concerned mainly with the technical aspects of building, construction, or engineering will not be eligible for the contest. However, films made for commercial purposes but which deal primarily with planning or its related fields may qualify for entry.

3. An Admission Committee will examine the films submitted, forwarding those which meet the requirements of the contest to a Jury of Awards for its consideration. The jury will consist of persons of recognized standing in the planning profession, the film industry and the arts.

4. The three categories of films selected for the contest are:

   1. Documentary and educational films, i.e., films dealing with the broad aspects of planning,
   2. Promotional films for public participation, i.e. films designed to stimulate public support for the planning process, and
   3. Training, technical or scientific films, i.e. films concerned with the technical training of planning personnel, particularly in regard to specific planners matters.

5. Entries for the contest may be of the following types:

   1. Moving pictures or animated cartoons,
   2. Color or black and white, and
   3. Sound films, with or without sub-titles.

Only films of 35 mm. or 16 mm. will be accepted, and they should be made for a 10 to 30-minute run on the screen. Longer films may be accepted at the discretion of the jury of awards. Films which were registered at the Vienna Planning and Housing Film Contest held in July, 1956, will not be eligible for the 1960 International Film Contest.

6. Application forms may be obtained by writing to--International Film Contest, 1960 World Planning & Housing Congress, P.O. Box 1729, San Juan, Puerto Rico, and must be returned on or before September 30, 1959. Films should not be sent until a letter indicating acceptance of the entry is received from the Secretary General of the Congress. All final entires must reach the above address by March 30, 1960.

List of Recent Publications of Interest

Collins, Peter.
Concrete: the vision of a new architecture; a study of Auguste Perret and his precursors. Horizon Press, N.Y., 1959. 307 p. ($12.50)

Cronin, J.F.
Social principles and economic life. Bruce Pub., 1959. 436 p. ($6.50)

Harper, E. B. and Dunham A. eds.
Community organization in action... Association Press, N.Y., 1959. 543 p. ($7.50)

Hemdahl, R.G.
Urban renewal. Scarecrow Press, N.Y., 1959. 367 p. ($8.00)

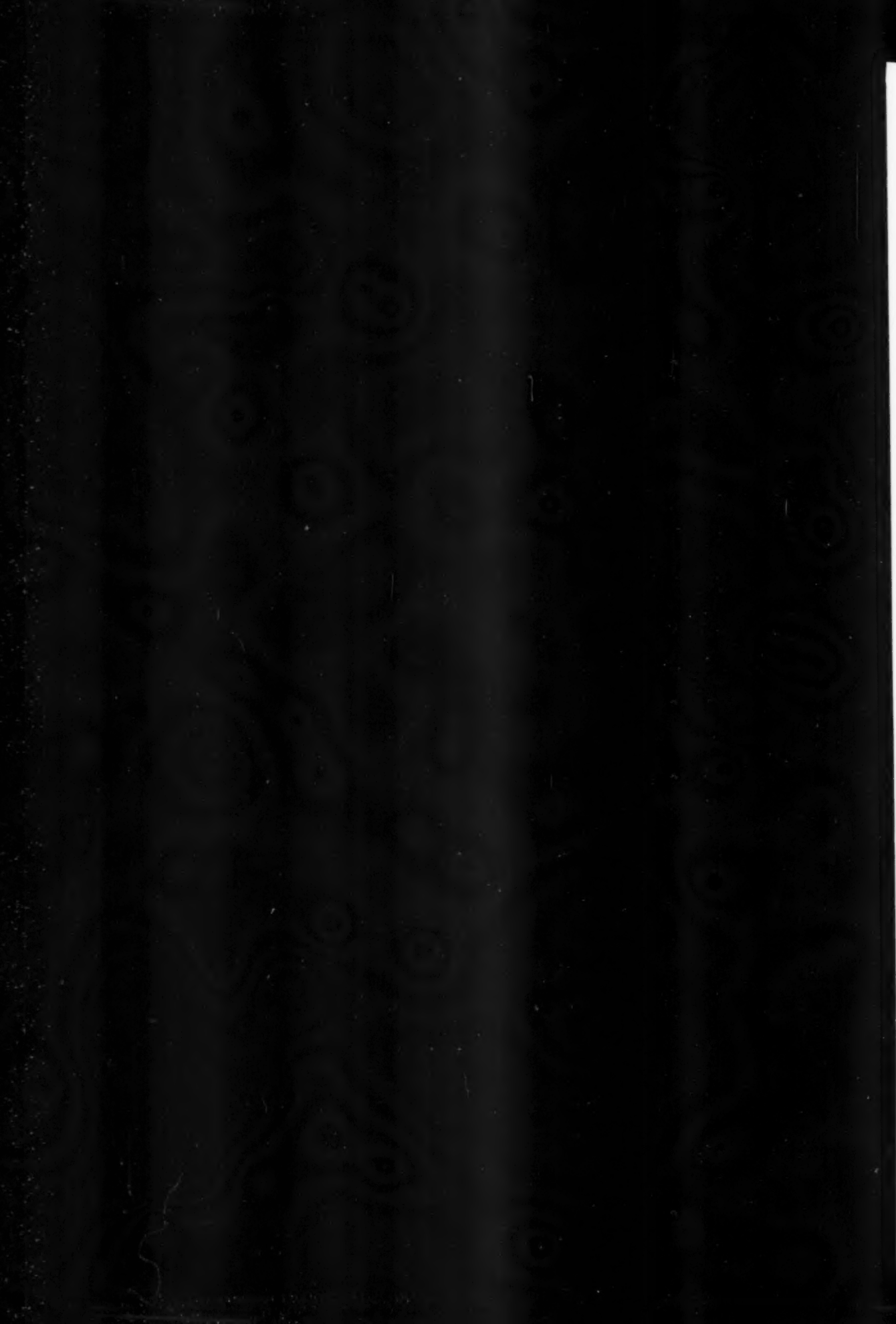
Hughes, R.O. and Pullen, C.H.W.
Eastern lands; revised by J.F. Reed, new edition. Allyn, N.J., 1959. 510 p. ($5.20).

Lichtenstadter, I.
Islam and the modern age; an analysis and an appraisal... Bookman Associates, N.Y., 1958. 228 p. ($4.50)

Morand, F.C.
Small homes in the new tradition. Sterling Pub. Co., N.Y., 1959. 143 p. ($4.95)

Ogburn, C.
Economic plan and action, recent American developments. Harper and Brother, N.Y., 1959. 287 p. ($4.75)

Unsal, B.
Turkish Islamic architecture in Seljuk and Ottoman times 1071-1923. Clarke, Irwin and Co., Toronto, 1959. 118 p. ($4.75)



E R R A T A

Reference		For	Read
Page	Paragraph		
80	"New Techniques for Analysis"	potentidal	pontential
86	11	in addition of	in addition to
86	12	and promoting co-operation of different on a subject of common interest.	and promoting cooperation of different professions on a subject of common interest.
90	45	courses in the teaching	courses on the teaching
92	54	courses in the relationship	courses on the relationship
93	63	Ekistics problems	Ekistic problems
100	12	areal	area
104	1	Middlesex Country	Middlesex County
110	10	shift to population	shift of population
112	1	practioners	practitioners
120	21	magnificant	magnificent
126	41	peripherys	peripheries
132	4	Bexion	Dexion
141	10b	contraditions	contradictions
145	27b	probably	probable
149	1	invidiuals	individuals
149	6	entires	entries

THE PUBLICATION of EKISTICS was started in the Autumn of 1955.

THE IDEA behind it was to supply members of Doxiadis Associates in remote field posts and U.N. Technical Assistance experts working overseas, with a timely selection of abstracts from international journals, papers and books upon the broader aspects of housing and planning.

THE TITLE EKISTICS, comes from the Greek verb OIKΩ, meaning settling down, and demonstrates the existence of a science of human settlements conditioned by man, influenced by economics, sociology, geography and technology.

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